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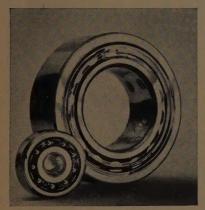


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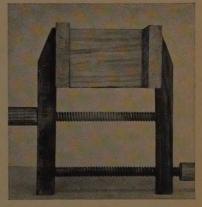
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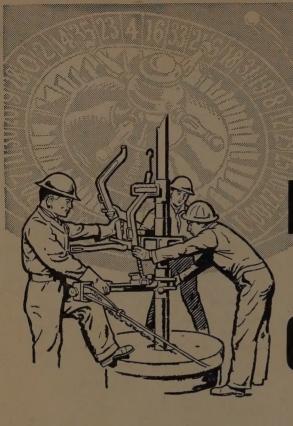


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NUMBER 1

Europe's Common Market and the Free Trade Area

As the weeks pass, there seems to be an increasing likelihood that the "collapse" between the more liberally oriented world-wide trading position of Great Britain and the traditionally protectinist policies of France may come to be regarded as an "historical suspension."

Whatever the outcome, we're happy to publish in this issue of *The Journal* both aspects of the increasingly significant economic outlook—an outlook with uncertain world-wide financial implications and of course ponderous Wall Street overtones.

It is certain that financial analysts will be seeking all information available about the European Common Market which officially came into being Jan. 1, 1959. By the early 1970's there may be a common tariff wall, common wage and tax levels, and a common interchange of workers between France, West Germany, Italy, the Netherlands, Belgium and Luxemburg. Meanwhile, and as a starter, these six countries have agreed to cut their tariffs against one another 10%, and increase imports from one another by 20%.

Exactly what these and other Common Market transactions mean for investors on this side of the Atlantic Ocean, and more specifically for companies with international operations, remains to be seen. But all authoritative sources tell us that the implications will be ominous—ominous at least to the business-as-usual point-of-view.

We consider ourselves fortunate to present an excellent article about the Common Market by a man who is equally at home with the three principal languages in the six Common Market countries, and who commutes between Europe and Wall Street.

And from Great Britain, a country espousing somewhat different methods of attaining a somewhat similar goal, *The Journal* presents an article which went the rounds of the highest British financial and economic circles before reaching our office. Briefly (perhaps too briefly, but then read the article), the British plan would embrace virtually all of non-Communist Europe in a huge Free Trade Area. Such a Free Trade Area might be termed the "ultimate ultimate" objective of both the Common Market countries and Great Britain.

The British view is authored by a high-level British economist who has followed all of the intricate ramifications across Europe since their inception.

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Analyzing Management

While lunching recently with Robert A. Weaver, corporate chairman and multi-company director, as well as being a long-time friend of hundreds of financial analysts across the country, Mr. Weaver remarked that the men who comprise corporate management should be analyzed as carefully as their annual reports and other stockholder statements.

This observation, coupled with others all along the same line, prompted us—even propelled us—to ask Mr. Weaver to write an article, an article which appears in this issue, headed "A Corporate Officer Analyzes His Financial Analyst Friends."

We particularly like the article, and feel that everyone will appreciate the helpful spirit in which it was written. It's for certain that the author is well qualified in years of experience—both in executive capacities with his own corporation and as a director of other firms—to know what he is talking about. Moreover, Mr. Weaver's views about the analysis of management are gaining increasing daily acceptance among the analysts themselves. And as the author himself concludes: management is the unseen element in the balance sheet. Moreover, it's an unseen element which may well outweigh all other factors.

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THE ANALYSTS JOURNAL

The Helen Slade Sanders Memorial Scholarship

BECAUSE of the many years which Helen Slade Sanders devoted to furthering the cause of financial analysts, and because of her long-time association with The Analysts Journal, of which she was managing editor, The National Federation of Financial Analysts Societies has honored her memory with a scholarship at Columbia University's Graduate School of Journalism.

As the first financial journalism scholarship ever to be established at Columbia, the income from the \$14,000 gift will "assist a worthy graduate student with good grounding in economics and with a particular interest in financial journalism."

Miss Helen Slade, as she was known professionally, and Mrs. Henry S. Sanders in private life, was managing editor of The Journal prior to her death last July. She attended Columbia University. Mr. Sanders is a vice president of the Bankers Trust Co.

Representing the entire membership of The National Federation of Financial Analysts Societies, L. Hartley Smith, Federation president, presented the \$14,000 scholarship check to Edward W. Barrett, dean of Columbia's Graduate School of Journalism. And at the time of presentation the following Federation resolution was read:

"The Officers and Executive Committee of the National Federation of Financial Analysts Societies, acting on behalf of the entire Directorate and Membership, and desiring to give tangible evidence of their love and esteem for Helen Slade Sanders, do hereby create the Helen Slade Sanders Memorial Scholarship in the Graduate School of Journalism at Columbia University in the City of New York. The principal amount of this Scholarship is to be \$14,000. It is the wish of the Executive Committee that the income on this principal amount be used annually, in perpetuity, for a scholarship to assist a worthy graduate student with good grounding in economics and with a particular interest in financial journalism."

In accepting the scholarship check, Dean Barrett paid high praise to Mrs. Sanders and said:

"We of the Graduate School of Journalism think it is singularly appropriate that this scholarship in memory of Helen Slade Sanders should be set up in this form and should be given to this school.

"It was in this room that Mrs. Sanders participated in the first annual Journalism Forum last spring. The Forum, indeed, was made possible by a gift from her, and from the National Federation of Financial Analysts Societies.

"She recognized the crying need for more writers who could report economic matters interestingly and clearly to the general public. She showed particular interest in our projected program to help give more training in this field.

"I speak for the University, for the Journalism School, for my colleagues on the faculty, and for present and future students in expressing deep appreciation for this most appropriate memorial scholarship."

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Creation of the Helen Slade Sanders Memorial Scholarship, at Columbia University's Graduate School of Journalism, goes into effect as L. Hartley Smith, president of The National Federation of Financial Analysts Societies, presents a \$14,000 check to Dean Edward W. Barrett. Participating in the ceremony, from left to right, are: John Stevenson, business manager, and Pierre R. Bretey, editor, of The Analysts Journal. Also, George M. Hansen, Dean Barrett, Mr. Smith, A. Hamilton Bolton and Henry S. Sanders. The late Mrs. Sanders is shown in the vignette.

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This country is going to be needing a lot more communication service in the years ahead. Matter of fact, the need is with us right now.

Just the great increase in population (there will be 40,000,000 more people in the U. S. by 1970) means that we'll be stepping right along to keep ahead of our customers' needs.

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A vital part of this concept is always to look ahead and not back. Many new things are already at hand or in sight.

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to communicate with each other—no matter how many miles apart. Great volumes of data of all kinds can be transmitted automatically over telephone lines at high speed.

We also have the prospect of providing picture channels for many purposes, in addition to the present networks for television broadcasting.

How far we go, and what we are

able to do, depends on money. To make the best progress and apply it to the greatest advantage of everybody, the Bell Telephone Companies must be in good shape financially.

In all lines of business it is the companies whose earnings are good that are able to make the best products, provide the best service and give the best values.

BELL TELEPHONE SYSTEM



The European Common Market

... U. S. industry dollar and plant investment in Common Market on the rise

by Dr. Koitcho Beltchev

THE BASIC CONCEPT of the Treaty of Rome, instituting the European Economic Community (the European Common Market) is not as much economic as it is political. The Treaty went into force Jan. 1, 1959.

For instance, the preamble to the Treaty states that the six governments—France, West Germany, Italy, the Netherlands, Belgium and Luxemborg—are "resolved to establish the foundation of an ever closer union among the European peoples." The economic union among the six nations is thus nothing more than a first step toward the accomplishment of the political aim, the creation of an entirely new political unit, a Federal Republic.

Under this light we shall endeavor to review here the provisions of the Treaty, to analyze the difficulties between the six nations and other countries of Europe including Great Britain, and to define the position of United States industry. In addition, the consequences of the Treaty should be regarded from a long-term point of view, because, successful or not, this Treaty will substantially alter the face of Europe.

The Common Market is a supra-national organization. There are only two other such organizations in Europe: the European Coal and Steel Community (ECSC), functioning since 1952; and the European Atomic Energy Community (EURATOM), created together with the Common Market. Other important organizations, such as OEEC, NATO, etc., are international organizations. The difference is quite obvious, since a supra-national organization, like the Common Market, is based on a partial transfer of sovereignty without however constituting a federal state, while an international organization, like OEEC, is based on a mere restriction.

PROVISIONS OF THE TREATY

The Treaty aims at creation of a customs union within 12-15 years by gradually removing tariffs and quotas among the six nations and establishing a common external tariff. It envisages likewise free movement of capital and labor, common agricultural and transport policies, insurance of relatively free competition, the creation of financial institutions to facilitate labor adjustments and the financing of

projects within the community and its associated overseas territories.

On Jan. 1, 1959 the six nations took the first step toward establishment of a customs union consisting of:

- 1. A 10% overall reduction in tariffs affecting all goods equally.
- 2. An overall increase of 20% in existing quotas and the transformation of these bilateral quotas into global quotas. There will be, however, a minimum quota increase of 10% for each product which means that if competition is feared in certain products the respective country will increase the quota only by the minimum 10%. For other products, where the fear of competition is less, the increase may go up to 20%.
- 3. The establishment of minimum quotas at 3% of the national production for each product.



The six countries comprising Europe's Common Market are indicated by arrows.

Dr. Koitcho Beltchev is manager of the Swiss Institutional Department of Hayden, Stone & Co. He holds a doctor's degree from Zurich University's Faculty of Law and Economics.

The six nations gave to non-members the advantages of point 1 and 2 but not of point 3.

To show how these measures affect the members and outsiders, we offer a hypothetical example in which the figures are apocryphal and taken only for purposes of illustration: We assume that France produces 1 million automobiles a year and imports under bilateral agreements, 5,000 autos from Germany and 5,000 from Italy. These two bilateral quotas have become since Jan. 1 a single global quota totalling 10,000 autos, which France could import from any one country in the Community. This quota is then increased by 20% bringing the total to 12,000. But since the assumed automobile production of France is 1 million units, the enlarged global quota is still less than 3% of the national production. The quota is thus raised to 30,000 autos to meet the 3% figure.

We may further assume that France also imports 5,000 cars from Britain which receives only the 20% enlargement of the quota bringing the total to 6,000 cars. If Germany and Italy should maintain their present position in the French market, their respective sales may climb from 5,000 to 15,000 cars each, while Britain's automobile sales could go only from 5,000 to 6,000. Again, let me emphasize that these are hypothetical figures which I'm using merely for illustrative purposes.

With respect to the movement of capital, the six nations gradually will abolish mutual restrictions and any discriminatory treatment based on nationality. By the end of the first stage, in four years, payments related to the movement of capital between member states are to be freed. Countries with balance of payments difficulties, however, can restrict capital movement without consulting the other members.

The Treaty provides that free circulation of labor should be ensured by the end of the transition period. Workers, however, can travel from country to country only to take up an offer of employment and not in search of work. The European Social Fund aims at the productive re-employment of workers who are threatened with unemployment.

On Jan. 1, 1959, custom duties on agricultural products were reduced by 10% and quotas enlarged as in the case of other products. During the transition period, however, the six governments will be able to fix minimum prices for imports from member countries and suspend or reduce imports of farm products if their prices fall below the minimum levels.

The European Investment Bank set up with a capital of \$1 billion has the task of financing projects in the under-developed regions of the Community. The Treaty provides that free competition should be assured. To this end, formation of cartels and all agreements on price-fixing, including output and market sharing, are expressly forbidden.

THE GOVERNING BODIES

Finally, provisions are made for the association of overseas territories having special relations with the member countries. A Development Fund is created whereby \$580 million will be invested over a period of five years in these territories

There are four governing bodies supervising the Community. They are:

- 1. The Commission, which alone has administrative power. It consists of nine members and is independent of national interests.
- 2. The Council of Ministers, which has the authority to establish policy and consists of one representative from each state. Each member of the Council represents the national interest of his country.
- 3. The Parliamentary Assembly, representative of the members, which is to exercise some measure of control. The Assembly consists of 142 delegates selected first by the respective parliaments and subsequently elected by universal suffrage. The Assembly can enforce the resignation of the Commission by a two-thirds majority.
- 4. The Court of Justice, appointed by agreement among the members and consisting of seven judges. The Court acts independently of national interests, and must ensure the observance of the rules and hear the cases brought by the member countries or organs of the Community.

There are several advisory committees: Economic and Social Committee; Scientific and Technical Committee; Consultative Committee; and the Monetary Committee. The respective operating agencies are: the European Investment Bank, European Social Fund, Development Fund, and the Commercial Agency.

THE FREE TRADE AREA

The remaining 11 members of the Organization for European Economic Cooperation (OEEC), including Great Britain, Switzerland and the Scandinavian countries, are not members of the Common Market because they feel unable or are reluctant to give up part of their sovereignty and prefer to preserve their tariffs on a national basis. Also, they are opposed to supra-national economic planning accompanied by a loose monetary discipline.

These other 11 nations, therefore, have proposed the creation of a Free Trade Area. Under this proposal, Great Britain and the other countries, would work with the six Common Market countries toward reduction and final abolition of tariffs and quotas in respect to industrial products.

Food, alcoholic beverages and tobacco would be excluded from the agreement, and each member would preserve its own tariff against the outside area, with the freedom to make individual changes. As a consequence, the FTA envisages 12 different tariffs—consisting of the single Common market countries' common tariff, and the tariffs of the other 11 countries.

This proposal, if accepted, would have served Britain very well; but when it became known, last November, negotiations collapsed. Under the British proposal Great Britain would protect her own agriculture, and the Common Market; but at the same time she would not make any political concessions whatsoever.

The six Common Market nations refused to accept new members at "bargain prices"; i.e., without assuming all obligations of membership. It is a fact that the British proposal is strictly commercial and omits consideration of the political aspects of the Treaty.

France, as the principal opponent of the British plan. probably had some additional reasons for rejecting the British proposal. As it is, France has been able to inject provisions in the Common Market Treaty which are very favorable to her. For instance, many escape clauses could aid France if she finds herself in economic difficulties. The agricultural clauses are shaped according to her views, as well as the "harmonization" of social policies. And France is unwilling to lose these advantages despite a certain desire to see Great Britain as an associate, thus playing a political counterweight to West Germany. France is also afraid, at least for the moment, of being unable to stand free competition from West Germany and Great Britain. All this, despite the very close economic ties between the six Common Market countries and the 11 European non-member countries.

In 1956, 24% of the total exports of the 11 non-member countries went to the six Common Market nations, and 26% of the 11 countries' imports came from the six. Similarly, 37% of the exports of the six countries went to the 11 non-member countries, and 25% of the imports of the six countries came from outside the Community. For some individual countries, the economic ties are even closer; for instance, about 50% of Austria's and Switzerland's trade is with the six Common Market countries. And 44% of West Germany's exports, outside the six countries, go to the non-member countries.

This close interdependence of Europe's economy would seem to make an agreement on the Free Trade Area an absolute necessity. Otherwise, what was planned as an integration will result in a disintegration of Europe.

POSITIVE TREATY ASPECTS

It is hoped that the Community ultimately will bring free trade to the Common Market nations involved, a Community consisting of 165 million persons. This will facilitate production in more efficient units and the producers in each nation will face the competition of the producers in all others without a protective tariff barrier. This could have a dynamic effect on the economies affected, depending on how vigorously the anti-cartel provisions are implemented. Lower prices may be the result with substantial benefits to consumers and workers. Living standards may be raised substantially, giving new impetus to increases in production. Raw material imports may assume such proportions that the associated overseas territories will be able to supply only a minor part of requirements. The nonassociated countries will benefit through this fact and substantially increase their exports to the Community.

It is further hoped that the members will become more politically and economically stable. The Treaty provides that they should help each other in temporary difficulties. And, last but not least, since none of the members is a world power anymore, the Union may strengthen their bargaining power and allow them to deal on equal terms with such giants as the U.S.A. and Russia.

NEGATIVE TREATY ASPECTS

There are wide-spread fears that the Common Market may take the form of a self-contained unit following a policy of supra-national collectivism, which would be nothing more than the extension of national collectivism. The latter originally caused the disintegration of Europe when, after 1931, exchange control and trade restrictions were introduced. The result may be the achievement of integration without liberation and the formation of a large closed unit.

The pioneer of the Common Market is the European Coal and Steel Community (ECSC) which has not succeeded in spreading to other countries owing to their unwillingness to accept the required supra-national political order and economic planning. It remains to be seen how the Common Market intends to embrace other countries, since it follows the same basic principles of the ECSC.

Within the Common Market, danger exists that too much economic planning, welfare state policies, etc., may arise, and that the harmonization of fiscal and social policies probably will require adjustments on the upgrade rather than on the downgrade. Here it should be mentioned that only West Germany and Italy enjoy complete freedom in determining the wages of labor. In Holland, the state guides wage policies, and in France and Luxemborg there are minimum wage laws. Until quite recently wages in France were also bound to a cost-of-living index.

The provisions of the Treaty are very flexible, and a good deal of discretion in interpretation resides in the administrative governing bodies. If for political or any other reasons protectionist groups should gain undue influence in the administration of these provisions, the entire project will be in great danger. The transition period is too long, and some of the countries involved have not shown much political or economic stability since World War II.

In its relations with the "outside world," the Common Market countries may well develop protectionist tendencies. For instance, in accordance with the Treaty, the common external tariff should be set at the average rate of the different tariffs applied by the members in January 1957. But there will be pressure from strong groups to raise the tariffs above the average. In addition, groups which up to now enjoyed protection in one Common Market country will push for protection in the other Common Market countries. Revenue duties, such as are presently in force in West Germany on coffee imports, may become protective duties for all members.

Time alone will tell what direction the Common Market will take. And while I have outlined some of the positive and negative aspects, it is impossible, at this early stage, to make any definite prognosis as the number of unknown factors is too large.

IMPACT OF COMMON MARKET ON UNITED STATES INDUSTRY

The United States government and United States industry have maintained a friendly attitude toward both the Common Market and the proposed Free Trade Area, hoping that a unified Europe will become economically and politically stronger. An integrated Europe would function on a more efficient basis, thus strengthening the purchasing power of the countries involved, and creating a wider market for U.S. products.

Interestingly enough the population of the six Common Market countries is 165 million and the population of the U.S. approximates 175 million. But, in billions of dollars the Gross National Product of the Common Market countries is only 150 compared with 453 for the U.S. Coal output in millions of tons is 273 in the Common Market countries, while it is 515 in the U.S. And, also in millions of tons, steel output in the Common Market countries is 66 compared with 113 in the U.S.

About 242 U.S. companies have plants in one or more of the Common Market countries. Seventy-five percent of the U.S. exports to these six countries consists of food products and raw materials, and 25% of manufactured goods. The former will continue to enter the Common Market without visible disadvantage. However, the manufactured goods will suffer substantially through the common tariff.

In order not to lose their export markets, the affected companies have three major possibilities:

1. They can license a foreign producer and receive a royalty.

2. They can enter into a joint venture with an established producer.

3. They can establish their own plant.

These measures, taken mainly to protect U.S. exports going into the Common Market countries, would stimulate the capital investments there. Approximately \$4 billion has been invested privately in Europe.

A FEW CONCLUSIONS

It is a fair assumption that the Common Market will prove advantageous to U.S. industry and that close economic collaboration between the two blocs will strengthen the capitalist system, the only system that guarantees to hard-working peoples the preservation of freedom and human dignity.

The Common Market will bring new hope to Europe, if historical prejudices are overcome. It can rejuvenate the European economy and do what the free trade area did for the United States and empire preferences for the United Kingdom. However, vested interests may work to preclude realization of hopes just as the United Nations may not succeed in keeping the peace.

PUGET SOUND POWER & LIGHT COMPANY

Common Stock Dividend No. 62

The Board of Directors has declared a dividend of 36c per share on Common Stock of Puget Sound Power & Light Company, payable February 15, 1959, to stockholders of record at the close of business January 26, 1959.

FRANK McLaughlin President

American Metal Climax, Inc.

COMMON STOCK Dividend No. 133

The Board of Directors has declared a dividend of Thirty Cents (30¢) per share on the Common Stock payable March 2, 1959 to stockholders of record at the close of business on February 20, 1959.

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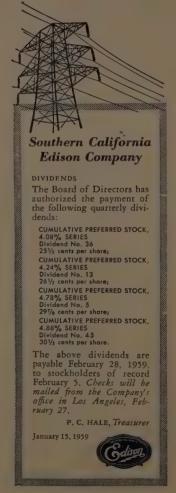
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The biggest single steel expansion in Ohio history included the addition of two new 375-ton open hearth furnaces and the enlargement of four other open hearths, sixteen new soaking pits, expansion at the 98-inch hot strip mill and the addition of new coke ovens.

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The increased capacity of the Cleveland Plant, together with the expansion of other strategically located facilities in Chicago, Illinois; Warren, Ohio; and Gadsden, Alabama, will provide better customer service and still greater production efficiency for the years ahead.

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The largest single project in Republic's Expansion program at the Cleveland Plant is the 45-inch universal slabbing mill which can produce slabs up to 75 inches wide.



One of the 16 new soaking pits which heat steel ingots to 2400° for rolling in the slabbing mills. Lifted from the pits by overhead cranes, they are carried to the slabbing mill on an ingot buggy.



Heated steel ingots are shown entering the mill from the background. After reduction to slabs they are carried on the conveyor table through two separate operations, cooled and shipped to the strip mill.



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British Views of the Common Market And the Free Trade Area

by Richard Miles

As THIS ARTICLE GOES TO PRESS a new phase is opening in the discussion of the European Market question: important changes of policy adopted by one country may lead to corresponding changes in the policy of another; questions on which agreement seemed impossible at the end of 1958 may be dissolved in 1959; new problems may have come to the surface; and new solutions may be proposed or found.

In the meantime, there can be no harm in setting out some of the issues behind these extraordinary and momentous economic developments in Western Europe. The issues need to be understood by anyone who is concerned with the pattern of world trade—not Europe's trade only. And I am particularly glad of a chance to set out Britain's own position on some of the most significant points.

It is sometimes said that Britain opposed or sought to undermine the European Economic Community (i.e., the Common Market). This is not true. Britain welcomes the Community and all it stands for. Britain's Finance Minister, the Chancellor of the Exchequer, speaks for Britain. Here is what he said in welcome to the new Community:

There can be no doubting the fresh impetus that has been given to all our efforts by the enterprise and the vision displayed by one of our most important parts: the Six [France, West Germany, Italy, Belgium, the Netherlands and Luxemburg] who have come together to create the European Economic Community... The Treaty of Rome is a very long step forward, bold, enlightened, practical.

And here is what the President of the British Board of Trade had to say:

I can understand that some of our friends in Europe, aware of how strong are Britain's ties with the Commonwealth, aware too of how complex was the balance of interests to be achieved in the Treaty of Rome, were alarmed that the Free Trade Area might upset the Common Market; and indeed we heard it suggested that it might be intended to do so. Let a British Minister say once again that these doubts about our intentions are without foundation.

And here is Mr. Reginald Maudling, Member of Parliament and the British Minister in charge of the negotiations during the past two years:

I am sure that when historians come to write of the last decade they will rate the Treaty of Rome as one of Europe's great achievements. To reconcile so many points of view, to solve so many fiendishly difficult technical problems and to incorporate them all in the

Richard Miles, Economic Affairs Director of the British Information Services, is a former assistant to the British Economic Minister in Washington, D. C. He also spent two years as a member of the United Nations' British Mission, and holds an economic and political history degree from Oxford University.

text of a valid treaty was indeed a great achievement. We in the United Kingdom hold very much to the belief that what strengthens our friends, strengthens us.

Affirmations of this sort have been made repeatedly over the two years or so of negotiations. Why, in spite of them, do rumours persist? I must try, by setting out the history of the British position, to show beyond doubt that Britain has had no hostility to the grand design of the Common Market. But she has challenged specific points in the detailed arrangements for tariffs and quotas. These, which I shall deal with, do not touch the grand design; but they probably account for the still widespread idea that she opposes the Economic Community itself. This charge is

WESTERN EUROPE

All the following countries are potential members of a European Free Trade Area, and actual members of the Organization for European Economic Cooperation. The Economic Community (Common Market) countries are marked with an asterisk.

Austria *Belgium *Luxemburg Denmark *Netherlands *France Norway *West Germany Portugal Greece Sweden Iceland Switzerland Irish Republic Turkey United Kingdom

not true. But it follows, "why does Britain stay outside the Common Market, if she approves of its general purposes?" Why could not Britain join?

The reason most frequently given is the Commonwealth. Many people don't understand this. They think of the Commonwealth as a smoke screen behind which Britain conceals a lack of better reasons. I'm afraid that many people simply do not understand the Commonwealth link. I must spend a few moments on it.

Some hard figures are in order. Almost half Britain's total trade is with her Commonwealth partners. With the "six" it is only 12%-14% of the total.

Now, Britain knows that the markets of other manufacturing countries, like Germany, for example, are more rapidly expanding and more immediately profitable than the markets of her Commonwealth partners which are predominantly based on agriculture and mining—primary production. But Britain cannot abandon the Commonwealth pattern of trade on that account. To join a European "preferential area"—which is what the European Community is before it becomes a Common Market—she would have to drop the Commonwealth, which is also a preferential area as well as being a unique political association. She would have to remove tariffs on European goods and thereby remove the preference she gives to Commonwealth goods. She would of course lose the preference she gets in some Commonwealth markets; for the essence of the Commonwealth arrangement is reciprocity.

One solution offered is for all the Commonwealth to be brought into the scheme so that there were no barriers between the states of Europe or between Europe and the Commonwealth—representing a quarter of the world's population.

IT COULD WORK-IF

Could this happen? It could, if Western Europe was ready to admit Commonwealth products on the same basis as its constituents admit each other's. If, in short, Western Europe was willing to open its markets to Commonwealth products, textiles from Hong Kong or India, lamb or dairy products from New Zealand, wool, fruit or dairy products from Australia, tropical fruits, fibres, oils, wine from Africa, etc.

But this is something that Central Europe never bargained for. After much difficult discussion the Community agreed to give the colonial territories of France and Belgium a special position in their markets; but to give free access to the agriculture of one quarter of the world is as difficult for agriculturally protected Europe as for the agriculturally protected U. S. of America. No one will dispute the basic rule of all tariff or quota negotiations—adamantly upheld by the U. S.—that all trade concessions must be reciprocal. Britain must offer special concessions to the different Commonwealth countries in return for the access she gets to their markets. European countries would have to do the same.

Britain can do this—and open her doors to this flood of produce—for one good reason. She needs it. Although she has a small and highly efficient agricultural community of her own, Britain, almost alone of modern industrial states, is not blessed with virtual self sufficiency in agriculture as well. She imports half of what she eats. She is, incidentally, Europe's own biggest market for agricultural and horticultural produce, as well as the main market for the Commonwealth.

Does it still seem that the Commonwealth argument is no more than a smoke screen? In case it does, it has to be remembered that the European Governments saw the difficulty long ago. That is why they were ready to conceive of a special sort of association in which Britain could join—on a give-and-take basis—in European trade, leaving her Commonwealth and world trade as they were. They agreed unanimously to study the Free Trade Area.

The next question. What is the Free Trade Area? It is not an alternative to the Customs Union. It would embrace the Customs Union in a larger group of all the 17 members of OEEC (Organization for European Economic

Cooperation). Examination of these terms and a little history is called for.

The Common Market proposal is understood, I think: six countries joined by treaty in the European Community, propose to underpin the economic side of their affairs with a Customs Union. That means that they would progressively lower tariffs and quota restrictions between each other. At the end of the process (in 12 to 15 years) they would have established a common tariff wall round the six as a group and removed all walls within the group. But the European countries outside the "six" would, in this event, be cut off from major existing trade links. Sweden, for example, has over a third of her foreign trade with the "six", and it has to be borne in mind that over the last 10 years all 17 countries of Western Europe-including the six—have cooperated closely in carrying out the obligations of OEEC regarding the removal of trade and payments barriers. This work in OEEC has expanded inter-country trade 300% in 10 years. It was therefore seen to be to the advantage of all concerned to ensure that some form of continuing trade freedom was maintained between the six and the rest.

HISTORY OF FTA REVIEWED

The result was the Free Trade Area proposal whose history is reviewed below. A Free Trade Area would remove tariffs between all its 17 members including the six. It would not establish any common tariff wall but it would leave the six free to develop into a fully fledged Customs Union, which would then be one unit in the Free Trade Area.

This plan, often represented as a Machiavellian British device, owes its origin in fact to the statesmen who drew up the first prospectus for the Common Market, or Customs Union of the Economic Community, The Preparatory Commission of the Six in its report (Spring of 1956) first offered the idea when they wrote: "The Customs Union . . . does not exclude the possibility of a Free Trade area . . . and again (respecting non members) . . . negotiations should be begun as soon as possible to arrive at some form of close association with them".

In July 1956 the OEEC countries—including the six—unanimously agreed to put in hand studies of the possibilities of a Free Trade Area. In December this scheme was reported to be technically feasible and 1957 opened with agreement to launch a fuller round of studies. It was now that the Treaty of Rome, establishing the Economic Community, began to take shape. Assurances were given that the Treaty would not be in a form that would make difficulties for the subsequent conclusion of a Free Trade Area treaty. The Treaty of Rome was signed in March 1957. Thereafter, it proved difficult to get the Free Trade Area discussions moving again. Ministerial visits took place between London, Paris, Bonn, Rome and other capitals.

The six now asked that the negotiations be postponed until the French (and other Governments of the six) had secured the ratification of the Rome Treaty. This was agreed by Britain and the other powers—for it was obvious that the six had a great deal on their plates. In exchange,

assurances were forthcoming that negotiations of the Free Trade Area project would be resumed as soon as ratification problems were out of the way.

It was in November 1957 that OEEC (the six Common Market countries included) again took up the Free Trade Area question—which was now of course a matter of negotiating a modus vivendi between the six treaty powers and the "non-six". Over the greater part of the ensuing year, negotiations were again in abeyance owing to the political crisis in France; but a final spurt between November and December 1958 was terminated when the French declared that their participation was impossible. With this history behind us, it is hard to see why Britain is still represented as the villain of the piece.

BRITAIN NOT HOSTILE TO PLAN

I have tried to show that Britain is not hostile to the Economic Community; that there are good reasons why she cannot join it and I have tried to show that the scheme of associating other European countries with the six for tariff reducing purposes has a very respectable history. It seems that all concerned are agreed that Britain could not join the Common Market but are agreed, too, that some form of association between the six and the rest of Europe, including Britain, was desirable. The final question, therefore: "Why have two years of negotiation on the Free Trade Area failed to secure final agreement?

The difficulties have centered round the prospect of different circles of protection in the Common Market on the one hand, and in the several countries making up the larger group on the other. Clearly, the lower external tariff countries would have a cost advantage in the larger "common market" of the Free Trade Area. The Free Trade Area proposals attempted to deal with the problem by providing for the exclusion from free trade treatment of all goods imported from outside Europe; but the formula offered was not acceptable. Incidentally, while this part of the negotiation was in progress, Britain was accused of seeking freedom of manoeuvre in tariffs with the implication that she wanted to raise them at will. This criticism ignored the fact that what Britain was asking, along with her other "non-six" partners, was freedom within the international rules of the General Agreement on Tariffs and Trades (GATT) to lower tariffs, as would be possible under Free Trade Area rules but not under the rules of the "six".

The other main point of difficulty was linked to this: Britain and her "non-six" partners saw no difficulty in the association provided that the Common Market did not aim as an unduly restrictive pattern: but if the six held out for relatively high protection it might be difficult to administer any system which linked the two groups. Furthermore, the higher the protection the greater the danger that trade would expand within the six country group only at the expense of trade with Europe and the rest of the world. It is this last danger that has exercised Britain

EXPANDED TRADE IS AIM

Britain's aim has been to ensure that the unification of Europe should be accompanied by expanding trade and not by the contraction of trade. Her method was to press for the mutual reduction of trade barriers. But with the seeming breakdown of the Free Trade Area negotiations in December it became immediately apparent that if—on Jan. 1, 1959 when the Common Market became effective—the Community was to stand alone with fairly high external tariffs, while removing only the internal tariffs and quota restrictions, trade within the Community might expand, but only at the expense of trade with the outside world.

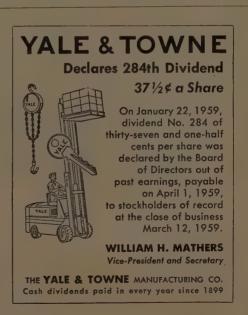
Other countries subjected to discrimination in this way would be under strong pressure to protect their own traders from the consequences. This is why there has been a real danger of a trade war breaking out in Western Europe.

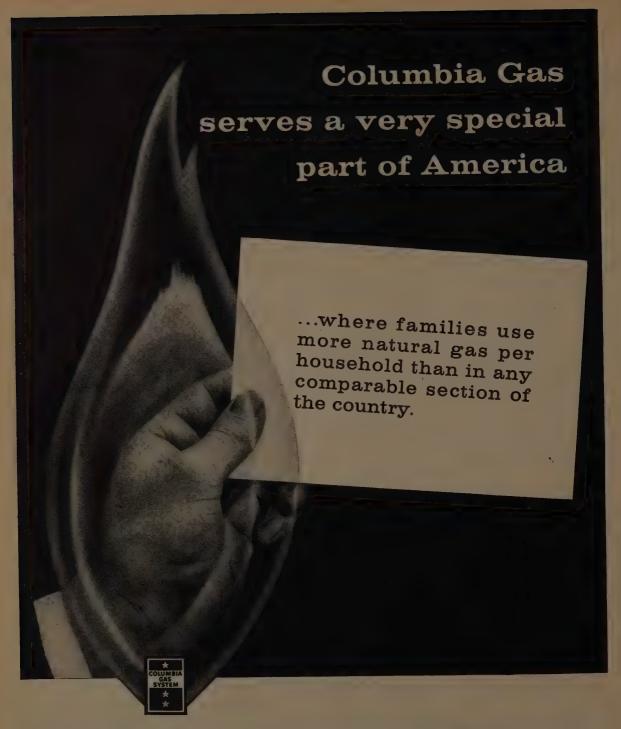
The most recent negotiations appear to have resulted in modifications to the immediate tariff and quota plans of the six so that in the first year of operations discrimination will be minimized. These negotiations are not complete and no plans for the longer haul have been announced at this time.

The line between a Common Market, which is obviously a good thing, and a discriminatory trading bloc, which is not so good, can be a delicate one to draw. The danger is that if accepted rules about tariffs and quotas and non-discrimination in trade break down, tariff blocs will become the rule in world trade, not the exception, and in the meantime Europe's prosperity, built on OEEC's rules for free payments and non-discrimination, will be at risk.

This danger does not come from the existence of the European Economic Community, whose broad concept is excellent. It comes from failure to reconcile the Community's tariff and quota restrictions with pre-existing obligations. It is on this narrow front only that Britain has asked the Community to modify its plans.

It is surely to the interest of the United States, also, that its European partners should build on a basis of expanding trade, rather than on new measures of protection.





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Measuring the 1957-58 Recession*

by Geoffrey H. Moore

WHEN THE BUSINESS RECESSION BEGAN in the United States in the summer of 1957, a great deal of interest arose in the question how severe it would be and how long it would last. There are various ways to approach this question. One can, for example, consider the factors that might be responsible for the recession, such as excess capacity in industry, over-accumulation of inventories, reduction in government orders for military goods, or tight money, and seek to determine how serious they are and how soon they might be corrected. In considering the influence of these factors upon each other, upon the policies to which they may give rise, and hence upon the general trend of economic activity, it should be helpful to know how these matters have worked out in earlier recessions. It should be useful, also, to know what features have differentiated severe from mild recessions, and how soon in a recession these features have become plain.

In October 1957 the National Bureau of Economic Research began to develop some comparative measures of the current and earlier recessions, in an effort to contribute towards an appraisal along these lines. Our first objective was limited to providing measures of the magnitude of decline in economic activity in earlier recessions with which the current recession could be compared. This would enable one to say, for example, whether a decline of 5 percent in industrial production during the first six months of recession was larger or smaller than the declines experienced in earlier recessions. No forecasting would be involved here—the measures would simply indicate the severity of what had already happened compared with what had occurred during other comparable historical periods.

The second objective was to determine how soon during a recession its ultimate severity relative to earlier recessions would be revealed in the decline in economic activity. Do more severe contractions start out with sharper declines in output, employment, sales, etc., or do they only develop later, or is there no rule about it? A third objective was related to the second: Could severe contractions be detected earlier in the kinds of economic data that typically move early, such as new orders or construction contracts, than in the broad economic aggregates such as total production or employment? Finally, a fourth objective was to discover whether and in what degree severe contractions in business activity lasted longer than mild contractions.

In approaching the subject in this manner, we were able

*This reviews and brings up to date the fuller study, "Measuring Recessions" by Geoffrey H. Moore, National Bureau of Economic Research, New York, N. Y., 1958.

Geoffrey H. Moore is the associate director of research for the National Bureau of Economic Research, Inc., and works closely with Arthur F. Burns, former chairman of President Eisenhower's Council of Economic Advisors. Mr. Moore has authored many well-known economic and business articles. to take advantage of many of the findings and statistical materials on business cycles developed by the National Bureau in the extensive studies upon which it has been engaged for many years. We had a chronology of business cycles covering the past 100 years showing how long each one lasted. We had measures of the severity of each contraction period. We had an extensive file of monthly statistical data adjusted for seasonal variation. We had a previously selected list of indicators that had proved to be most useful as leading or coinciding measures of economic change. And we had access to electronic computing equipment so that new calculations could be made promptly and accurately on a wide variety of data. The National Science Foundation had provided a grant of funds to develop the use of this equipment in economic studies, and the International Business Machines Corporation contributed the use of a 704 computer, one of the largest types.

Mobilizing all of these tools, we worked up measures of the percentage decline in output, employment, income, and other factors from specified business cycle peak dates. The 1957 and 1953 peaks came in July, the 1948 peak in November, the 1929 peak in August, and so on. The upturn after the 1953 peak came in August 1954, the one following the 1948 peak came in October 1949. The low point after 1929 was not reached until March 1933. The percentage decline in economic activity from peak to trough permits a rough ranking of the contractions according to severity.

The ranking of all contractions since 1920 except the brief one that immediately followed World War Two (in 1945) yields a scale with the contraction of 1926-27 as No. 1, the mildest, and that of 1929-33 as No. 7, the most severe. The others are: 2—1953-54; 3—1948-49; 4—1923-24; 5—1920-21; and 6—1937-38.

RELATIVE SEVERITY CITED

For each of the contractions measures were constructed showing the relative magnitude of the decline in business activity month-by-month as the contraction continued. By comparing these measures with the ranking, we could tell at about what stage—how many months after the contraction began—the relative severity of each contraction became evident and how it manifested itself in different aspects of economic activity such as production, employment, income, and prices. Similar measures constructed during the course of the contraction that began in July 1957 could be used to appraise its severity compared with earlier contractions.

Table 1 shows how the method worked out for one widely used economic indicator, the Federal Reserve Index of Industrial Production. Note that the peak dates are not necessarily those at which the production index reached its peak, but rather when business activity at large did so, as measured by a variety of factors. Usually, however, the peak

Table 1
Percentage Changes in Industrial Production
During Eight Business Cycle Contractions

			-	Business	Cycle Pe	ak		
Months after Peak	Oct. 1926	July 1953	Nov. 1948	May 1923	July 1957	Jan. 1920	May 1937	Aug. 1929
		1	Percentag	e Change	from Peak	a		
1 2 3 4 5 6 7 8 9 10 11 12	-1 -1 -1 -1 +1 -1 -1 -3 -3 -5 -5	0 - 2 - 3 - 5 - 8 - 8 - 10 - 10 - 8 - 9 - 10	-2 -3 -5 -6 -7 -8 -8 -9 -7 -6 -9 ^b	0 - 2 - 2 - 4 - 6 - 6 - 8 - 6 - 4 - 6 - 8 - 12	0 1 2 4 7 8 10 12 13 ^b 12 9 8	+ 3 + 1 - 4 - 2 - 2 - 4 - 4 - 6 - 9 -18 -23 -27	- 1 + 1 - 1 - 4 - 12 - 20 - 27 - 29 - 30 - 30 - 32 - 34	- 1 - 3 - 8 -11 -11 -11 -13 -13 -16 -18 -21 -24
13 14 15	—7 ^b —5 —3	—10 ^b — 9 — 8	5 4 5	-16 -18 ^b -14	— 6 — 6	-27 -30 -30	—32 ^b —29 —24	-24 -26 -27
	— 7	Per —10	centage 1	Decline, Pe —18	eak to Tro	ugh —30°	-32	—52°

a Measured from three-month averages centered on the peak month to single-month figures for each succeeding month.

in the production index has not differed by more than a month or two from the business cycle peak, and it has always been at a relatively high level at the business peak date. Use of the business peak dates enables us to examine a wide variety of series on a comparable basis.

The table shows that declines of 2 or 3 percent in industrial production are the rule in the first two or three months of a business recession. Moreover, the relative severity of the decline shows up only irregularly during the first six months or so after the contraction begins. The mild recessions of 1948 and 1953 began with a relatively sharp decline in production, while the severe contraction of 1920-21 began with a relatively modest decline in production.

The ultimate severity of the 1929 contraction in comparison with the 1920-21 or 1937-38 contractions is not evident in terms of the decline in industrial output even after twelve months had elapsed. Nevertheless, these measurements do permit at least a rough classification of contractions according to severity after about six months, and the validity of the classification improves as the span increases. It can be made more dependable by reference to other data.

The decline in industrial production during 1957-58 appeared to be of intermediate severity after the first five months, i.e., after data for December 1957 became available. This observation could not, however, be relied upon heavily at the time as an index to the ultimate severity of the contraction, since the historical record showed that the shifts that might subsequently occur were considerable. As it turned out, the nine-month decline in production to April 1958, which appears to be the business cycle trough

month, was larger than the peak to trough declines in the 1926-27, 1953-54, and 1948-49 contractions, but smaller than in the 1923-24, 1920-21, 1937-38, and 1929-33 contractions.

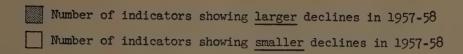
TEN "LEADING" INDICATORS COVERED

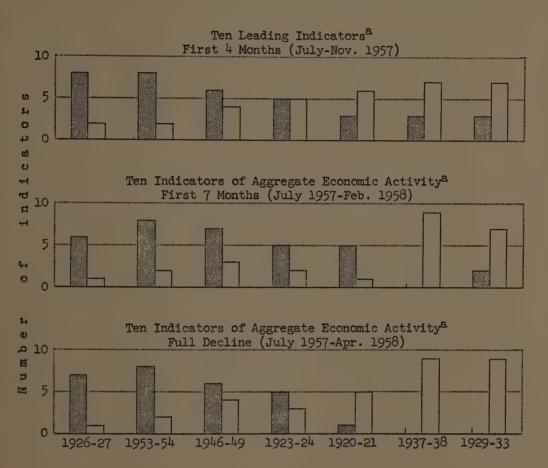
Similar studies were made of nine other indicators of aggregate economic activity (employment, unemployment, gross national product, carloadings, bank debits, personal income, retail sales, profits, and wholesale price index). The studies also covered ten "leading" indicators—types of economic data that typically begin declining before a recession starts (new orders for durable goods, residential construction contracts, commercial and industrial building contracts, average workweek, layoff and hiring rates, stock prices, basic commodity prices, new incorporations, and business failure liabilities). We concluded:

- 1. When a business recession begins, most broad indicators of aggregate economic activity show relatively slight declines, and during the first six months of the recession the magnitude of the declines bears little relation to the ultimate severity or depth of the recession.
- 2. About six months after a recession begins, the percentage declines from the peak to the current month in most economic aggregates are smaller in mild recessions than in severe recessions, and this ranking is maintained in succeeding months with little change.
- 3. When such comparisons are made for "leading" indicators, the distinction between mild and severe recessions begins to appear as early as three or four months after the

b Business cycle trough month.

c Business cycle trough months were July 1921 and March 1933.





* The earlier business contractions, listed in order of severity (mildest first), are Oct. 1926-Nov. 1927, July 1953-Aug. 1954, Nov. 1948-Oct. 1949, May 1923-July 1924, Jan. 1920-July 1921, May 1937-June 1938, Aug. 1929-Mar. 1933.

The number of indicators available for each comparison is sometimes less than ten.

Source: National Bureau of Economic Research, October 1958.

Table 2

Duration of Business Contractions and Periods of Depressed Activity

						Numb	er of Month	- Per Cent Decline		
Business Cycle		Recovery		Peak to	Trough to Recovery	Peak to Recovery	in Industrial Production,			
Pe	ak	Troug	gh	Dat	te a	Trough	Date	Date	Peak to Troughb	
Oct.	1926	Nov. 1	927	June	1928	13	7	. 20	7	
		Aug. 1		May	1955	13	9	22	-10	
			949	Apr.	1950	11	6	17	. — 9	
May	1923	July 1	924	July	1925	14	12	26	18	
	1957	Apr. 1	1958			9			—13	
2	1920		921	Oct.	1922	18	15	33	30	
	1937	June 1	938	Oct.	1939	13	16	29	-32	
		Mar. 1		Nov.	1936	43	44	87	52	

^aDate when industrial production index regained its level at the preceding business cycle peak (three-month average centered on the peak).

recession starts, and is also substantially maintained in succeeding months.

4. On this basis the intermediate position of the 1957-58 contraction (more severe than the milder contractions since 1920, less severe than the worst contractions) first became apparent in data for the "leading" indicators for November 1957, i.e., four months after the peak of July 1957. It was confirmed by most indicators of aggregate economic activity when figures for February 1958 became available. The accompanying chart shows how these comparisons stood, in terms of these two groups of indicators, four months and seven months after the recession began. Shown also is the comparison of the full nine-month (July 1957-April 1958) declines in the aggregate indicators with their full declines from peak to trough in the earlier contractions, all of which lasted longer than nine months.

Studies of the duration of business contractions, i.e., the interval from peak to trough, revealed no clear rule. Frequently both mild and severe contractions have ended within about a year. Thus the mild 1953-54 contraction lasted 13 months (July 1953 to August 1954); and so did the severe 1937-38 contraction (May 1937 to June 1938). But recovery to the preceding peak level has been accomplished much more quickly after mild contractions than after severe ones. Hence the period of depressed activity has been much longer when the contraction was deep. Table 2 shows how this has worked out in terms of the index of industrial production.

We concluded that in view of the intermediate severity indicated for the 1957-58 contraction, it would be in line with previous experience if the level of economic activity generally remained below the previous peak level (July 1957) for a period ranging from a year and a half to two years. Whether this will happen remains to be seen. By September 1958, 14 months after the July 1957 peak, industrial production had recovered a bit more than half its decline from July 1957 to April 1958, and was about 6 percent below the July 1957 level.

Other measures of activity may recover their pre-recession levels earlier or later than industrial production. By

August 1958 three of the ten indicators of aggregate economic activity were above their July 1957 levels: personal income, bank debits, wholesale prices. The other seven were below their July 1957 levels. On the other hand, five of the ten leading indicators had already recovered their July 1957 levels by August 1958. They were industrial stock prices, residential building contracts, commercial and industrial building contracts, new incorporations, and the hiring rate.

DEVELOPMENTS IN PERSPECTIVE

With further testing the method described briefly in this paper may prove to have a certain limited value as a forecasting scheme. It does not, however, take into account directly many factors, such as governmental measures taken to combat depressions, which have an important bearing on the ultimate depth or duration of a recession. I think the method is of more value simply as a means of putting current developments in perspective, so that judgments will be made in neither too complacent or too apprehensive an atmosphere. By revealing in simple fashion some of the stable as well as the variable features of recessions, the materials should be useful particularly to those who have little time to study the history and intricacies of economic fluctuations, but yet have to make important decisions that will affect or be affected by them.

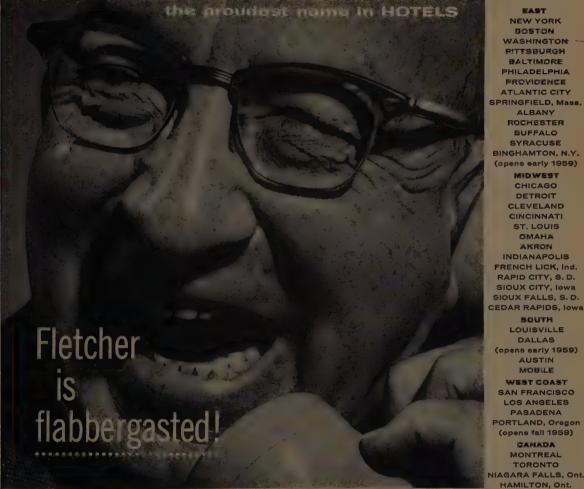
The method for appraising and comparing a recession, month-by-month as it develops, can also be applied to the ensuing recovery, to measure its vigor, scope, and unusual features, to develop some rough notions as to its probable course and duration, to check the reasonableness of forecasts constructed by other means, and to keep in clear view at all times the sequence of economic developments, the influence of governmental policy changes, and their possible implications.

Research along these lines concerning the current economic recovery in the United States is now under way at the National Bureau of Economic Research.

b Measured from three-month averages centered on peak dates (see Table 1).

⁽Editor's Note: This article appears here with the permission of Giuseppe de Meo, Editorial Director of "Mercurio," Italian economic publication.)





EAST NEW YORK DOSTON WASHINGTON RITTSBURGH BALTIMORE PHILADELPHIA PROVIDENCE ATLANTIC CITY SPRINGFIELD, Mass. ALBANY ROCHESTER BUFFALO SYRACUSE BINGHAMTON, N.Y. (opens early 1959)

MIDWEST CHICAGO DETROIT CLEVELAND CINCINNATI ST. LOUIS OMAHA AKRON INDIANAPOLIS FRENCH LICK, Ind. RAPID CITY, S. D. SIOUX CITY, Iowa SIOUX FALLS, S. D.

SOUTH LOUISVILLE DALLAS (opens early 1959) AUSTIN MOBILE

WEST COAST SAN FRANCISCO LOS ANGELES PASADENA PORTLAND, Oregon (opens fall 1959)

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NEWS ON TEXACO PROGRESS—RESEARCH

Oil research – from test tube to radioactive cobalt



YESTERDAY. Decades ago, Texaco scientists worked with relatively crude laboratory equipment, as they probed the fundamental mysteries of oil. Nevertheless — though early oil research was primitive — it resulted in important improvements in petroleum products. Many of these improved products were pioneered by Texaco.



TODAY. Texaco scientists continue their search for basic petroleum knowledge, now using such ultramodern tools as radioactive Cobalt-60 in one of the world's most fully-equipped industrial research laboratories. This is only part of Texaco's great research center at Beacon, N. Y., one of the Company's four modern research centers. Hundreds of Texaco scientists are continually working to create new and better products for more and more people.



Valuation of Common Stocks¹

by Nicholas Molodovsky

"TO BRING THE HOPEFUL OUT OF THE WILDERNESS," says a master and teacher extraordinary, "I have endeavored to show that building one's best skill is basically a matter of laying one little essential brick of fact on top of another. The confusion comes from the readiness of the uninformed to believe that this skill is an abstruse affair with secrets deeply concealed, instead of a fundamentally simple thing for human enjoyment."²

These sage remarks about golf can be applied to investment. It too is really a simple activity devoid of magical secrets, conducive to human satisfaction and welfare, and in which proficiency is attained by clearing away the incidentals and, brick by brick, building a structure of fundamental facts.

Another great teacher and master, whose career has also been unfolding in demanding areas, but in somewhat different fields of endeavor, tells about a scientist and his efforts "to clear a space in the tangled underbrush of fact and fancy so closely interwoven and cemented by strange words." 8

President Conant enriches the advice of Tommy Armour. We shall be guided by both the educator-diplomat and the philosopher-pro. After clearing some ground we shall start laying brick on brick. But to make sure that we are erecting a sound structure, let us first inspect the quality of our building materials.

Testing the Bricks

Twenty years ago the Cowles Commission for Research in Economics published monthly indexes of common stock prices, earnings, and dividends, as well as of their principal interrelations, such as yields and earnings-price ratios, for 69 industry groups or combinations of groups, 1871-1938. It originally planned to take its indexes back to a still earlier period. But an extensive survey revealed the scarcity of data. Information on capital structure, earnings, and dividends of industrial and utility stocks was practically non-existent for the years before 1871. Consequently, the period covered by the indexes could not have been longer nor their scope wider. The Commission's over-all indexes combining the individual groups are in fact indexes of all stocks.

As stated in the Introduction to its Monograph 3, "the purpose of the Cowles Commission common-stock indexes is to portray the average experience of those investing in this class of security in the United States from 1871 to 1938. The indexes of stock prices are intended to repre-

1. Footnotes appear at end of article, p. 99.

Dr. Nicholas Molodovsky has been with White, Weld & Co. for more than 25 years. Prior to World War II he was vice president and director of the firm's European subsidiary in Paris. Dr. Molodovsky holds a master's degree in economics from Harvard University and a doctor's degree in economics from the University of Paris.

sent, ignoring the elements of brokerage charges and taxes, what would have happened to an investor's funds if he had bought at the beginning of 1871 all stocks quoted on the New York Stock Exchange, allocating his purchases among the individual issues in proportion to their total monetary value, and each month up to 1938 had by the same criterion redistributed his holdings among all quoted stocks."

In brief, the Commission set itself the task of putting together the longest and broadest historical record of average common stock experience. And to extend its indexes into the future it spliced them to the indexes of Standard Statistics Company, which, by merger, became Standard & Poor's Corporation.

The '500' Index

This great statistical organization has fully lived up to the trust placed in it by the Commission. On March 1, 1957, it initiated a Price Index of 500 stocks, representing more than 90% of the market value of all common stocks listed on the New York Stock Exchange.

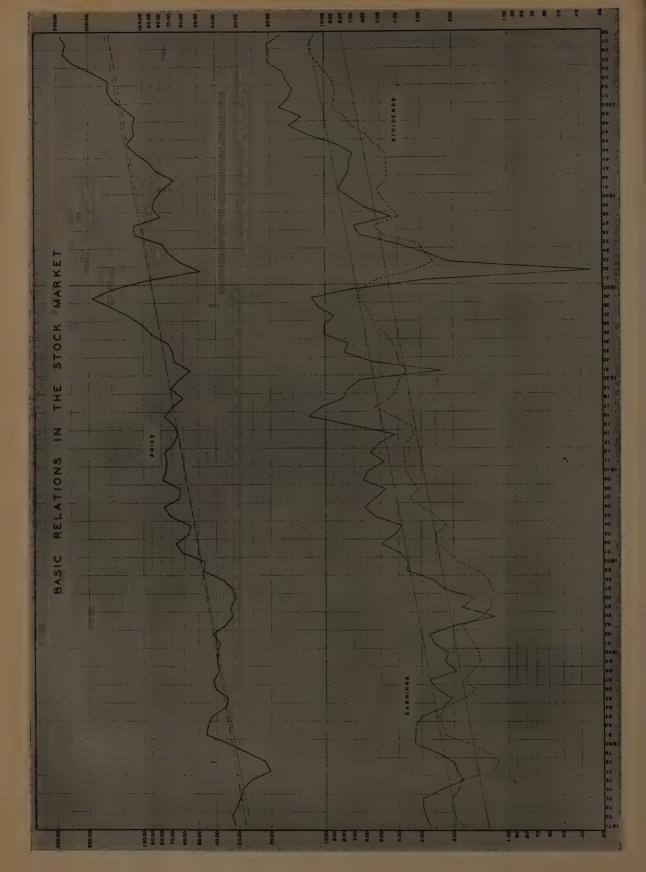
As this article goes to press Standard & Poor's is about to publish earnings and dividends based upon its '500' Price Index. An important new statistical tool will thereby become available for measuring and recording the movements of these three basic factors of the stock market beginning with the 1957 data.

By reactivating the earnings and dividend series of its composite index of 90 stocks Standard & Poor's filled the twenty-year gap between the Cowles Indexes and their '500' Index. These series, which go back to 1926, had been discontinued in 1951. Recomputed and expressed in terms of the '500', they will link together into a long, continuous chain the Cowles Commission Indexes and the '500' data.

The Core and the Margin

When the writer undertook his present study this chain had not yet been forged. For the years after 1951, when the earnings and dividend data accompanying the 90-stock index were discontinued, the void was especially glaring. To fill it, rather than have recourse to indexes constructed by one of the statistical organizations, we used our own averages of basic stocks, described in detail in "The Core and the Margin", The Analysts Journal's prize-winning essay for 1954 (published in August). This average, which contained 50 stocks, has been enlarged to 70 basic equities. As the title of the 1954 article suggests, the average of basic stocks has a complete and exact counterpart in an average of secondary stocks which now also number 70the widest composite average of secondary stocks and the only one to be accompanied by earnings and dividend figures.

The author's averages of basic and secondary stocks represent two cross sections of the market. Each contains rails and utilities as well as industrial equities. The number



of stocks selected to represent various branches of economic activity depended upon their importance in terms of the value of all common stocks listed on the New York Stock Exchange. And every equity contained in each average has a closely matched twin in the other, average. Both averages go back to 1937.

While the two averages are exact duplicates structurally, each matching pair differs widely in price and quality. One consists of 70 basic equities belonging to the leading and strongest corporations; together, they represent the country's economic core. The stocks composing the other average are those of a secondary echelon of the American economy and are nearer its margin.

To extend the historical record provided by the excellent indexes of the Cowles Commission beyond 1938 the author had considered splicing his own combined average, which merges the basic and secondary stocks. But a statistical comparison for 1937-50 of the average of basic stocks with Standard & Poor's 90-stock index showed that the curves of prices, earnings, and dividends were so similar that he decided to splice only the average of basic stocks.

Splicing the Indexes

The splicing was based on the 1937-38 data of the two series. As the relation of the Cowles indexes to our 50-stock averages in all three factors rounded out to 2.5:1, price-earnings ratios and yields could be preserved intact.

Our calculations were carried out in terms of annual data of the spliced series from 1871 through 1955. Data for the last three years were added on the accompanying chart to give an up-to-date picture. However, to avoid the risk of distortion in statistical measurements it is advisable to wait for more evidence of cyclical formation before including the recent years in computing existing correlations and the resulting formulae of basic relations among the main factors. Conclusions based on partial cycles may be misleading. And once such information is available, it will undoubtedly be desirable to recompute everything in terms of the new '500' Index.

This period, 1871-1958—little short of a century—is so long and the indexes used for its major part are so broad that the relations they depict are the quintessence of the general. Some shorter segment of this period or less comprehensive indexes would be likely to produce different numerical results, colored by the characteristics of the segment and the nature of the indexes chosen. But our chart records the basic traits shared in common by the entire species and which are therefore typical of all its members.

The Basic Trend Lines

Into the curves of prices, earnings, and dividends we can fit their respective trend lines. The three trend lines were traced by the method of least squares. Each represents the average expression of each of the three factors, reflecting and embodying all their respective annual changes.

It is quite remarkable, therefore, that despite the entirely independent and separate computations by which they were derived, the three trend lines reveal an almost identical upward slope: 1.99% for prices; 2.13% for earnings, and 2.12% for dividends. The differences are so small as not to be significant: only 1/100 of 1% per year between the

trend lines of earnings and of dividends and due chiefly to rounding out decimals. The trend lines of earnings and dividends are parallel.

We can learn a lot by examining this simple chart. It shows the fundamental underlying relations of the three principal factors of the stock market. Regardless how they fluctuate historically, earnings, dividends and prices are bound together by a real and definite relationship. Dividends obviously flow out of earnings. The relation between their respective trend lines for any period of more than a few years must necessarily be close. Nevertheless, it is astonishing that in this case their annual average rates of growth are identical. This demonstrates that the selection of such a broad index of common stocks and the use of a period of such length have really succeeded in reaching the rock bottom of the most basic relations in the stock market.

"The slope of the stock price trend line does not match quite as perfectly those of earnings and dividends. Still, its average annual rate of increase, 1.99%, does not differ significantly from those of the other two trend lines. For practical purposes all can be rounded out to 2%.

Yields and Rate of Discount

Other useful observations can be made from our chart. Not only do the three trend lines run almost parallel, but their mutual relations can be ascertained and measured.

The average yield, as measured by the arithmetic totals of all actual dividends and prices for the entire period, is 4.945%; when measured by the two trend lines, it is 4.955%. Both figures may be rounded out to 5%, which may be accepted as the representative historical current return from common stocks. This rate does not measure the total return from dividends, which continue to grow as long as the stock is held.

Such an overall 'effective yield' must take into account also the 2% annual growth rate of the two trend lines. Projected indefinitely into the future, a current return of 5% and a growth rate of 2% per annum produce an effective yield of 7.1%, which may be rounded out to 7%.

The Line of Present Worth

From the effective yield the present worth of future dividend payments can be computed. If it is used as the discount rate of future dividends growing indefinitely at 2% per annum, then the sum of the present values of all such future dividends equals 20 times any point on the dividend trend line.

This line of present worth has been drawn into our chart; indeed, practically superimposed upon the trend line of prices. Most of the time they are so close that they can scarcely be separated. They cross approximately in the center of the period and only at its two extremes is the distance between them measurable.

As the line of present worth is the capitalized dividend trend line, it exactly parallels the latter. On the other hand, the trend line of prices was independently fitted and produced an annual rate of growth minutely lower than that of the dividend trend line.

The overlapping of the trend lines of prices and of their discounted capital worth is not without significance, estab-

lishing the concurrence of average price with value. And since the trend lines of dividends and earnings are parallel, they are interchangeable as a capitalization base.

Chart of Basic Relations

Our chart passes through most of modern American economic history. During its 88 years stock prices and their earnings and dividends have been subject to an infinite variety of events and changes, to practically all conceivable economic and political developments and contingencies short of the destruction of the free enterprise system. And, as already stressed, the data used to reflect their vicissitudes are as all-inclusive as the period itself.

The year 1958, the most recent to appear on the chart, was the last port of call on a long historical voyage. Thus the points which the trend lines touch in 1958 reflect not only current conditions and those governing the recent past, but also the relations prevailing in every single year since 1871. They are just as representative of the interrelations between stock prices, dividends, and earnings that are typical for the period following World War II, as of the times of World War I, or even of the years right after the Civil War.

In fact, what our chart offers is not a measure for any particular year of the period it covers, but an expression of historical norms of interrelations between prices, earnings, and dividends of common stocks.

Practical Measure of Value

All our observations so far were drawn directly from our chart of Basic Relations in the Stock Market. To go beyond this point we must think a bit ourselves. But, since this is fatiguing, it may be well to explore beforehand what it can promise besides mental enrichment. As Anita Loos once remarked, a kiss on the hand is very nice, but a diamond bracelet lasts forever.

Let us transport ourselves in spirit say a quarter of a century into the past and assume that one of us, perhaps at high personal cost, had procured straight from the devil reliable dope concerning precise annual true values of a certain number of stocks for each of the next 25 years. Such full disclosure would undoubtedly have seemed to promise a lot of coin. But even if he had been as smart as his friend the devil in picking the growingest of all the growth stocks, he would most likely have come to a sad end from exhaustion and frustration, because all the other investors and speculators trading in that particular stock, unable to lift even one of the seven veils concealing the future, would have operated in the dim light of their exceedingly limited vision.

The point of this parable is that to make real money it is not knowledge of real value that counts. Considerably more practical and infinitely more precious would be some reliable standard for comparing the investment values of all existing stocks without attempting to transgress the boundaries of such readily accessible information and modest imagination as constitute the frontiers of our so-called minds. And if such a standard does not exist, why should we not try to make one? If successful, we shall be better off even if we lose the prideful feeling that everybody else is out of step; that we are right and the market is wrong.

Common Measures

The existence of various historical relations which can be read from the basic chart suggests the intriguing thought that they could be used for evaluating and comparing stocks. They are the ultimate common denominators to which all stocks can be reduced, revealing conditions underlying the economics of the stock market. If we could distill from all stocks the measurements they have in common, we could appraise each in terms of all the others.

Such a generalization or normalization of value would not destroy or drown out any individual characteristics of the particular stock we may wish to appraise. On the contrary, against the background of the merged features typical for the entire species, its own special traits will stand out in bolder relief. The most desirable of all conceivable standards of value, it would measure all stocks in terms of one another by what they have in common beneath their separate superstructures.

Methods of Stock Valuation

The method of valuation strongly suggested by the chart of Basic Relations is present worth. It is not the only conceivable or practical method of appraising common stocks. Other approaches to value are being successfully used. As illustrations of the range of the problem and of the offered solutions, three viewpoints may be mentioned. They consider the investment merits of common stocks in the light of assets; return on investment; and normal price.⁵

Representative of the first avenue of thinking is Carl P. Heartburg, vice president and investment officer of the First National Bank of Birmingham, Ala., who approaches value through assets.

Net assets behind a share of common stock are measured by deducting from the total assets all the habilities and stock issues senior to the common, then dividing by the number of shares. Depending on the analyst's viewpoint and judgment, the assets may or may not include intangibles. The resulting net worth per share is called the stock's book value.

A generation or so ago, book value was the principal if not the only measure of a stock's investment merits. Watered stock was the danger to look out for. But gradually investors' attention has been shifting to earnings and dividends as valuation yardsticks. They often have little relation to book value which was being increasingly neglected in investment analysis.

More recently, interest in this expression of net worth has been reviving because of greatly heightened activity in acquisitions of control and corporate mergers. Another reason had its roots in new trends in valuation. Earnings growth was being studied in relation to its effects on book value. We shall revert to this aspect of investment analysis in discussing the quality of earnings.

Heartburg's method originated in a thesis he wrote 13 years ago for the Graduate School of Banking at Rutgers University. Since then it has been refined through incessant practice. By it he checks other value studies employed by his Bank as a criterion for purchases and sales of stocks. Recently he wrote the author that this check is "derived by multiplying current book value by an average of the ratios

over the past seven years of book value to a mean annual price. This simple formula produces a line bisecting cyclical moves of individual stocks and of the various averages. The exceptions tend to be of a rather temporary nature and are brought about by revolutionary changes within the company, such as have occurred at Chrysler over the past 10 years. An extrapolation of this line, adjusted by the analyst's knowledge of the company and the industry in which it operates, could well serve as an intelligent estimate of stock values for some reasonably short number of years in the future."

The philosophy of Julian Gumperz, president of Basic Economic Appraisals, is well qualified to represent the second approach, which concentrates on measuring the return from the investment. The following is a very condensed and probably over-simplified summary of this substantial intellectual structure.

Basic Economic Appraisals holds that the prime function of capital is to produce more capital. It measures capital efficiency by the return produced in a stated period compared with the return in a base period. The economic value of current earnings, it claims, is a function of a company's current capital efficiency, which determines the real price paid for a company's securities, whatever their dollar price.

Mistrusting the conventional price/earnings ratio as an approach to investment evaluation, BEA substitutes a normalized price/earnings ratio. Utilizing the latter in combination with its measure of capital efficiency, BEA establishes what it considers to be the current economic value of a common stock as compared with its current price. It measures the indicated dollar return to capital required to justify the recent price of the stock. It calculates the probability of attaining this sum of returns by comparing the capital on hand with the capital that would be required at current capital efficiency to produce the needed sum of returns. A company's historical rates of return on capital and a company's record of normalized price/earnings ratios serve BEA as measures of the task investors' expectations have implicitly imposed upon management and of the sufficiency or insufficiency of a company's resources with which to fulfill these expectations.

Andrew Teller, assistant vice president of SwissRe Corp., an associate of Swiss Reinsurance Co. of Zurich, is a leading proponent of the "normal price" approach, which belongs to the third variety of valuation methods mentioned.

Like most experienced analysts, Teller does not limit his work to finding the determinable value of stocks. He considers the latter as a necessary, important and very practical tool, but uses it within the framework of what he calls a "total" approach. He draws heavily on general economic research for estimating a company's earnings and dividends. But he also studies the psychological factors reflected in the supply and demand in the public auction market where the stock is traded. Often they can account for quite a bit of its relative action. Teller believes that the best tool is the ratio chart of a stock's price performance. From experience he has found that study of these various factors combined with the valuation work itself produces the best results in the long run.

On the specific subject of valuation, Teller has studied

the relationship of price to earnings and dividends of about 200 leading industrial common stocks since 1935. His findings may be stated very broadly in his observation that historical multipliers of earnings and dividends are a reliable guide to current and future multipliers in the majority of industrial common stocks.

To translate these observations into some practical form of valuation, he applies two basic rules:

- 1. Historical multipliers of earnings and dividends are related to percentage payout of earnings and ratio to the Dow-Jones Industrial Average to find a "normal" price. A historical price volatility index is applied to this "normal" to arrive at a "calculated range." When the stock is near or below the "calculated bottom" it is deemed price cheap; conversely, when above the "calculated top", price dear. This price finding is then checked against the fundamentals for an explanation of the apparent cheapness or dearness. If no irregularity is seen the stock becomes a logical candidate for purchase or sale as the case may be. The actual timing of the transaction is refined by the ratio chart of the stock's relative performance.
- 2. Whereas the above rule is applied generally to all stocks, the historical ratios are adjusted upward or downward in revaluating a company or industry as deemed necessary by fundamental changes discovered by economic research. An outstanding example of upward revaluation is the steel industry which was upgraded in 1954 and again in 1958 as a result of better-than-expected earnings performance.

The above rules are general guides only. The final valuation is still one of judgment.

Value as Present Worth

Research in an important area must be a collective effort. Many minds attack the problem from different angles. It is a never ending process. We believe we can contribute to the common fund. And we hope that from these seeds some more creative thinking will sprout.

The chart of Basic Relations is a challenge. Its line of present worth; like the characters in Pirandello's play, is searching for an author.

The doctrine of present worth has not lacked able defenders. Cannot the ball be carried a few yards farther down the line? Benjamin Graham and David L. Dodd, state that this doctrine has become "an accepted tenet of financial theory." (Security Analysis, 3d ed., p. 433.) Its first application to the valuation of common stocks this writer has been able to find was made by Robert G. Wiese, now a senior partner of Scudder, Stevens & Clark, one of this country's leading investment counsel firms, with head-quarters in Boston. Two articles by Wiese appeared in Barron's in September 1930.

The earliest substantial pioneering work on the subject came out a few months later when Samuel Fliot Guild, at that time also connected with the same firm, published his Stock Growth and Discount Tables (Financial Publishing Company, Boston, 1931). As in the case of so many other

(Continued on Page 84)

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What Price Featherbedding?

... for Railroads, make-work costs skyrocket beyond \$476,500,000 annually

by James R. Sullivan

THE YEAR 1959 DAWNS as one of the most fateful in the 130 years of U. S. railroad history. Severely shaken by heavy losses of traffic, both to powerful competitors and to the vagaries of the business cycle, the rails for many months have been struggling to bring operating costs into line with shrunken revenues. While cut-backs and across-the-board reductions have been made in nearly every area of expenditure, until this year virtually nothing could be done about the archaic and sacrosanct union rules which annually sluice down the drain hard-earned railroad dollars by the hundreds of millions.

However, 1959 marks the expiration (on Nov. 1) of the present three-year National Agreement between labor and management with its moratorium on such rule changes. The door will therefore be open for a concerted drive to correct the abuses and the flagrant wastes of manpower and money inherent in union featherbedding practices. What comes out of these negotiations, expected to open substantially in advance of the Nov. 1 deadline, may well determine the future earning power and even the survival of the nation's rail carriers as a free enterprise transportation system.

THE HUMAN EQUATION

On nearly all railroads more than 50c of every dollar collected from freight charges and passenger fares goes out in the paychecks of employes. The human equation in the industry is the railroad man himself. He is actually something of a paradox. It would be difficult to find anywhere an employe with more loyalty to his company, more job interest and native resourcefulness, or who occupies a more secure and respected niche in the community than the railroader. On the opposite side of the coin, however, when he is represented by the monolithic power of organized labor, the rank-and-file employe is unable to express any concern he may personally feel for the welfare of the industry, or any individual recognition he has of the fact that obsolete and unreasonable rules in his organization's labor contract have placed a strangle hold upon the company from which he gets his livelihood.

The present difficult labor situation on the railroads has not developed overnight, nor is it the result of calculated viciousness nor intentionally destructive policies on the part of the big unions. Rather, it has grown up gradually from

James R. Sullivan, whose railroad background includes experience as a locomotive fireman and engineer, fuel engineer and train master, is now a vice president (personnel) and assistant to the president of The Minneapolis & St. Louis Railway Company. He holds a master's degree from the University of Minnesota and spent seven years as an economic researcher for the Illinois Central Railroad.

their strong efforts to "build fences" around particular jobs or functions and to maintain unyielding craft lines regardless of the cost to the industry. That this philosophy needs revision is evident from the fact that the total number of railroad jobs which stood at over 1,800,000 in 1926 has now declined to only about 840,000. At the same time the proportion of inter-city freight ton-miles handled by rail has declined by 50% in a little more than a generation.

Railroad wages are generally recognized as among the highest in American industry. They have quadrupled in three decades. This, however, is not the problem. Given an effective degree of cooperation between labor and management on the railroads toward modernizing the industry's rigid and out-dated labor contracts, the carriers could readily pay substantially higher wages to their people and at the same time offer them many, many more job opportunities. At the same time the industry could turn in a far better transportation job for its patrons at much lower cost, and generate notably better returns to its investors.

THE CONCEPT OF PRODUCTIVITY

Bringing to pass these very desirable benefits to all of the parties at interest—labor, management, the customer, and the investor—requires no politician's pie-in-the-sky, nor a magician's "Abracadabra." The key is found in the one word *productivity*. The railroads can be strong—and thus have a promising future to offer to employes and a worthwhile return for investors—only to the degree that they are successful in increasing the number of ton-miles and passenger-miles they can produce and sell, per employe and per dollar spent for wages.

There are two distinct aspects to the idea of increased productivity per man-hour. They are often confused, either accidentally or on purpose, by people who talk and write about the subject. One is the result of replacing muscle-power with machine-power. This requires that railroad investors supply the money to buy the new machine or laborsaving device. The increased productivity generated by the machine, however, is the productivity of capital investment. It is not due to increased effort by labor. The substitution of the automatic stoker for the muscle-power of the fireman on steam locomotives made possible the hauling of larger and heavier trains. This was accomplished not through more but actually through less effort on the part of the engine crew. The same reasoning applies to the introduction of the diesel locomotive.

The second aspect of increased productivity, and the one in which labor is entitled to full consideration in benefitting from the results, is through reorganization of the work to permit more effective utilization of the man-hours paid for by the shipper's dollar. It is at this point that we find

the conflict of ideas between management and the unions representing railroad labor.

LABOR STATESMANSHIP

One of our most demanding tasks in railroad management is to convince our co-workers on the labor side of the table that modernization and fundamental revision of their contracts and working agreements is essential to restoring the railroads' competitive position. We must somehow get through to these folks and make it clear that we can continue to pay high wages and employ large numbers of people only if we can increase our volume of business by greater productivity per man-hour and lower unit costs. The rewards to labor, to management, and to the investor, if we can find common cause toward this objective could be tremendous.

There is some hope that this vital common ground may yet be reached. A few isolated instances of labor statesmanship have recently been seen in the industry. Notable among them have been some realistic and courageous statements by Grand Chief Engineer Brown of the Brotherhood of Locomotive Engineers on modernization of labor agreements, and his vigorous support of railroad efforts to diversify into other forms of transport.

THE FEATHER MERCHANTS IN ACTION

Whenever "make-work" rules are discussed, union representatives quite understandably seek to minimize their impact upon the railroad industry and chide us for calling attention to a few isolated "horrible examples." The unfortunate part of the story is, however, that the examples are anything but isolated and when taken together constitute a tremendous financial load. "Make-work" or "featherbed" rules are to be found in all railroads. In a recent case on the Minneapolis & St. Louis, for example, a two-unit diesel locomotive was being prepared to move a freight train. Before the engine left the roundhouse, the mechanical department coupled to it another locomotive unit in which the motor was not operating. The intention was to send the disabled unit on to the next terminal for repairs. The road brakeman that day made exactly the same moves in herding the locomotive from the roundhouse to the train yard as he always did. In this case, however, since the dead unit was attached to the regular train engine, it was necessary for him to walk 15 additional steps in order to couple the locomotive to the outbound freight train. The brakeman collected an additional day's pay on the ground that moving the dead locomotive unit was switching work not included in his contract. At the same time the railroad was also liable to claim for day's pay from an entire switch crew because of their not being used to move the unit from roundhouse to train yard.

In another recent instance, the M-StL operated a small local passenger train between Albert Lea, Minnesota and Albia, Iowa. This was a seven-hour run. If the labor contracts had allowed it, a single crew in each direction could easily have handled these trains over the road between terminals. Crews were changed enroute, however, at an intermediate terminal because it was required by the rules of the Agreement. This requirement to practically double-crew a com-

paratively insignificant local passenger train artificially raised the operating cost so that an annual loss of about \$29,000 was being sustained. Petition was therefore filed with the Iowa Commerce Commission to discontinue the train because of the operating loss. Our calculations indicated clearly that if a day's work were rendered for a day's pay by the two crews necessary to handle these trains, the operating loss would be almost exactly offset and the train would break even. This was pointed out to the labor organization, but to no avail. Our only alternative was therefore to discontinue the train.

In circumstances such as these, it might be more correct to describe the featherbedding or make-work rules as workabolishment provisions, since M-StL now has no train, no crew, and no service for passengers on the Albert Lea-Albia route.

An important part of the problem here derives from the fact that railroad unions, which are among the oldest in American industry, were originally developed along strict craft lines and have continued on a rigidly compartmentalized basis ever since. This means, for example, that when a new engine for a diesel locomotive arrived at the M-StL Cedar Lake shops in Minneapolis a short time ago, the mechanics who were to install it were not permitted to touch the paper wrappings around the motor or to unfasten the hold-down bolts securing it to the flat car. Although they could easily have done the work, they had to stand back idle while it was performed by clerical employees from the store department.

THE DIESEL FIREMAN

A multitude of examples of excess crew requirements might be cited. A case in point is the requirement of a fireman on diesel freight and yard locomotives. In neither case does the fireman perform any useful service. In stating their case for the fireman on diesels, the Brotherhood of Locomotive Firemen and Enginemen make much of his alleged value as a safety factor and a "second pair of eyes in the cab." This argument ignores the fact that there are now not two but three men on U. S. freight locomotives. Any lookout or safety function of the diesel fireman therefore duplicates the work of the forward trainman who handles this duty quite adequately since he also rides the locomotive cab.

Serious doubt is cast on the value of the fireman as a safeguard or "second pair of eyes" even in passenger service by the tragic accident to CNJ Commuter Train 3314 which went through an open drawbridge into Newark Bay, with the loss of forty-eight lives, last September. In this instance, the excess employe did not prevent the accident.

In another recent case a diesel fireman, with absolutely no other duties to perform than to function as lookout and take action in the event of disability of the engineer, signally failed to perform even that simple duty. Without the slightest effort to avert the impending crash, he allowed the engineer of a Santa Fe passenger train to enter a 15MPH curve in a congested yard area at nearly 70 MPH. The train overturned killing thirty passengers and injuring 122 others. Later investigation showed that the engineer had

"blacked out" some time before the accident with an epileptic fugue.

The shocking sequel to this tragedy is that when the carrier dismissed the fireman for his gross failure to perform the only function that might conceivably have justified his existence, his union prosecuted the case vigorously through all the channels of appeal. When it finally reached the National Railroad Adjustment Board a Referee, with no railroad experience whatever in his background, ordered him immediately restored to service with all rights and privileges and with pay for all time lost—some \$14,000. In this fantastic decision, the Referee elected to substitute his judgment for that of the operating officers responsible for the safe movement of trains on the Santa Fe. The Referee concluded that to have expected the fireman to prevent the accident "... is to expect too much from any average person..."

THE CANADIAN DIESEL CASE

In the diesel era the fireman is an anachronism. He is simply a hold-over from earlier years when his services were needed on steam locomotives to generate steam by stoking the fire and attending to the water level in the boiler. Recognizing this waste of man-power, the Canadian Pacific Railway over two years ago notified the Brotherhood of Locomotive Firemen and Enginemen that with the transition from steam to diesel power on the CPR, the carrier would not use firemen on diesel freight and switching locomotives. The railroad proposed an especially considerate and humane program by which the transition could be achieved without hardship to the men involved. The carrier offered to continue all firemen in service with more than three years of seniority regardless of whether used on steam or diesel locomotives. Those having less than three years' service were to be given opportunities for employment in other branches of the company.

The firemen would thus gradually be eliminated by the forces of attrition, since no new men were to be hired in the craft. The labor union flatly rejected this commonsense economy proposal and early in 1957 a nation-wide strike by the Firemen's Organization tied up the entire railway for nine days during the dead of winter. After lengthy negotiation, the Canadian government appointed a Royal Commission to explore the question thoroughly. The Commission, consisting of three eminent jurists, spent nearly a year riding locomotives and trains in Canada and in Europe to observe railroad operations at first hand. Their report supported the carrier's contention that firemen are unnecessary on diesels and endorsed the railway proposal to gradually discontinue their use. The union denounced the findings of the Commission and touched off another full scale work stoppage early last summer. The strike failed, however, because an aroused public opinion came strongly to support of the railway and the Canadian government.

A similar battle is now in the making against the Canadian National which has served a like notice on the union for discontinuance of diesel firemen.

The uncompromising attitude of the labor unions in Canada presents an interesting contrast to the solution developed by the railway unions in England on the same

problem. On Jan. 1 of last year, an agreement went into effect on the British Railways providing for the elimination of locomotive firemen on diesel engines in nearly every type of service. It is also interesting to note that in recent weeks over 30% of road freight and switching operations on important segments of the Canadian Pacific are being carried on without firemen on the locomotives and without the slightest delay or interference to service because of their disappearance.

THE HIGH COST OF 'FEATHERS'

The magnitude of the "make-work" bill paid annually by U. S. shippers and travelers who use the rails is shown by a recent study of just part of it. The price tag on only five major featherbed elements among "operating" unions alone takes over \$476 million per year. This is made up approximately as follows:

1. Diesel firemen in freight and yard service	\$200	million
2. The archaic 100 miles equal's a day's pay rule	150	million
3. The iron-clad separation of road and yard service which quite generally forbids crews of one craft to do work within the		
rigidly defined bailiwick of another	60	million
 Unnecessary crew changes enroute at terminals established many years ago in the 15 MPH steam locomotive era 		million
5. Roadway machine pilots and other excess and unproductive members of certain train		
and yard crews	16½	million
Annual Total	.\$476	,500,000

When only five featherbed elements produce a total of this size, it is evident that the cost of scores of other areas of enforced waste of man-power in the railways is astronomical.

OUTLOOK FOR THE FUTURE

The picture of excess crew rules, make-work practices, and other kinds of featherbedding highlighted in the paragraphs above is essentially a negative one. So negative that unless it is corrected, we can have but little hope for restoring the railroads to vigorous competitive health.

There is, however, an important positive aspect to the railroad labor scene which has tremendous potential if it can be reached and stimulated constructively. This is the huge resource of individual loyalty among railroaders which they have proven many times over. For example, when the M-StL was in dire straits in the 1930's and its larger neighbors were preparing to dismember and gobble it up, rankand-file employes and union leaders spent thousand of offduty man-hours and many hard-earned dollars in campaigning for traffic to hold the road together. In more recent years on a national basis, the labor organizations gave support to some of the reforms outlined in the Weeks Report. Railway labor also endorsed some of management's proposals to the Smathers Committee such as rate-making freedom, relief from freight and passenger excise taxes, user charges on publicly provided transportation facilities, tighter agricultural exemptions, and several others.

If railway management and its compatriots on the labor side of the table can somehow find the ways and means to work together on these vitally needed changes in labor contracts, a whole new golden age of railroading may open up before us. This is true because there exists a tremendous elasticity of demand for railroad services. It must be remembered that even under their present great handicaps, railroad costs and those of their heavily subsidized competitors are only pennies apart. Inherently, the steel wheel on a steel rail has no peer in efficiency of mass transport. Unshackling of that efficiency through relief from the staggering burden of featherbed costs would permit wholesale revision of railroad rates. With the resulting large increase in traffic volume, many thousands of new job opportunities would be created for railroaders in strong, progressive, taxpaying companies under no shadow of subsidy or threat of public ownership.

NUMBER, PLEASE

To illustrate this point, an interesting parallel may be drawn between railroading and the telephone business. In contrast to the railroad situation, Northwestern Bell Telephone Co., which serves much of M-StL territory, has had almost no opposition from the Communications unions in its fast-moving drive toward mechanization and better operating methods through such devices as dial systems, and the use of microwave to replace costly and vulnerable pole lines. With this freedom to innovate, it has continuously reduced unit costs and has enormously increased the market for its services. For example, in 1925 with "Number Please" operators handling a long distance call Minneapolis to Chicago, it required 10 minutes just to put the call through and ring the telephone wanted. Today, with dial equipment the caller in Minneapolis can reach his party

in Chicago in only 45 seconds. With all of the pay increases and inflation that have occurred in the intervening 34 years, the amazing thing is that the price of that phone call has been cut from \$9.85 in 1925 to only \$1.05 today. Looking at this phenomenal performance, a railroad labor leader might ask "Has this meant fewer jobs and lower wages?" Quite the contrary—the tremendously increased productivity per employe has so expanded the market for telephone service that total employment of telephone operators alone at Northwestern Bell has more than doubled. There were 2,792 in 1925 and nearly 5,700 in 1959. The average wage has increased more than 450% in the same interval.

CONCLUSION

Assuming any appreciable reduction in government regulation, if we railroaders could free ourselves from the shackles of archaic labor agreements, we would increase our volume of business just as spectacularly as has Northwestern Bell in the illustration cited above. To the rank-and-file railroader the benefits of doing so would be enormous in terms of higher wages, greater job security, and vastly enlarged horizons for personal development and advancement. The correlative advantages to shippers and passengers, to management people, and to the owners of railroad securities, are too obvious to require cataloguing.

Unions in other fields have recognized that steadily increasing productivity is the real key to business growth and true job security. I cannot believe that railroad labor men are any less intelligent than these outsiders. With so much at stake for the future, management and labor in 1959 must bury their differences and get on with the job. The rewards of success in solving the industry's labor problems may be beyond our fondest imagining.

RADIO CORPORATION OF AMERICA



Dividend Notice

The following dividends have been declared by the Board of Directors:

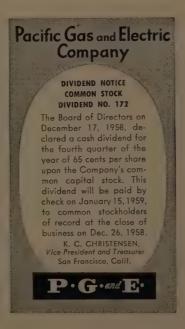
First Preferred Stock

87½ cents per share on the First Preferred Stock, for the period January 1, 1959 to March 31, 1959, payable April 1, 1959, to stockholders of record at the close of business March 9, 1959.

Common Stock

An extra dividend of 50¢ per share and a quarterly dividend of 25¢ per share on the Common Stock, payable January 26, 1959, to stockholders of record at the close of business December 19, 1958.

ERNEST B. GORIN,
Vice President and Treasurer
New York, N. Y., December 5, 1958



R. J. Reynolds Tobacco Company

Makers of
Camel, Winston, Salem & Cavalier
cigarettes

Prince Albert, George Washington Carter Hall smoking tobacco

QUARTERLY DIVIDEND

A quarterly dividend of \$1.00 per share has been declared on the Common and New Class B Common stocks of the Company, payable March 5, 1959 to stockholders of record at the close of business February 14, 1959.

W. J. CONRAD, Secretary

Winston-Salem, N. C. January 8, 1959



facts and tigures

HIGHLIGHTS.

Net sales of Continental Motors and its consolidated subsidiaries, Wisconsin Motor Corporation and Gray Marine Motor Company, totalled \$131,415,279 in the fiscal year ended October 31, 1958. Comparable figure for the previous fiscal year was \$135,610,890.

Net earnings in 1958 were \$3,536,528, as compared with \$3,583,301 in the preceding fiscal year. Net earnings were \$1.07 per share.

Diversification of product continued an important factor in maintenance of the company's volume in a year when business in general was reduced.

The company's list of manufacturing customers has been further expanded in 1958, as has the line of engines needed to meet customer requirements.

Wisconsin Motor Corporation returned substantial earnings in spite of reduced volume, and its outlook for 1959 is good.

Gray Marine Motor Company introduced important new models, and in spite of the expense incident to new model introduction, showed a profit in 1958. It also increased its representation in inboard boats, both in this country and abroad.

Continental Aviation and Engineering Corporation experienced its best year to date, with net earnings of \$1,349,740 as compared with \$897,535 in 1957. Two new turbojets have been released for production in 1959. The company's fine showing is ascribed to improved operating efficiency, the effect of product improvement cost reduction programs, and benefits of the first full year's operation with complete production facilities and tooling at the Toledo plant.

A new turbojet model developing 60% more thrust with an increase of only 6% in weight was developed in 1958 for the new Ryan Q-2C target drone.

Major developments in the Multi-Fuel and Compression Ignition Engine programs, covering a wide range of liquid-cooled and air-cooled engines for numerous applications, are continuing on an accelerated basis, with some models approaching production status.

Two of the Military Standard engines developed at the company's Lyndon Avenue facility in Detroit are now in volume production, an educational contract for a third model in this series has been received, and two additional models are scheduled for production later in the year.

Continental aircraft engines set two important new world records in 1958. A single-engine Beechcraft Bonanza with the new Continental system of fuel injection flew 7,000 miles from Manila to Pendleton, Ore., for a world distance record, and a Cessna 172 with Continental 0300A engine remained aloft at Dallas for 50 days, flying the equivalent of four times around the globe.

•	ST/	ATISTICS			
Fiscal Years Ended Oct. 31	1958	195 <i>7</i>	1956	1955	1954
Engine output (horsepower)	10,231,837	10,549,655	10,783,043	13,876,317	14,659,577
Net sales	\$131,415,279	\$135,610,890	\$125,116,269	\$145,465,155	\$182,061,693
Net earnings	\$3,536,528	\$3,583,301	\$1,604,924	\$2,502,287	\$4,542,748
Net earnings per common share	\$1.07	\$1.09	\$0.49	\$0.76	\$1.38
Dividends per share	\$0.55	\$0.35	\$0.25	\$0.70	\$0.80
Current assets	\$56,101,397	\$64,454,365	\$59,262,735	\$58,115,700	\$67,362,396
Current liabilities	\$21,289,109	\$30,598,007	\$28,304,638	\$27,553,219	\$35,667,076
Net working capital	\$34,812,288	\$33,856,358	\$30,958,097	\$30,562,481	\$31,695,320
Ratio of current assets to current liabilities	2.6 to 1	2.1 to 1	2.1 to 1	2.1 to 1	1.9 to 1
Long-term debt	\$2,355,000	\$2,480,000	\$2,760,000	\$3,040,000	\$3,320,000
Property, plants and equipment (net)	\$15,733,097	\$16,223,841	\$16,547,581	\$17,219,239	\$16,654,419
Stockholders' equity	\$49,279,352	\$47,557,824	\$45,129,523	\$44,349,599	\$44,157,312
Book value per common share	\$14.93	\$14.41	\$13.68	\$13.44	\$13.38

<u>Continental Motors Corporation</u> MUSKEGON, MICHIGAN



Drilling in Lake Maracaibo, Venezuela

PURE hits oil 8 times in a South American lake

Our recently completed wells in Lake Maracaibo, Venezuela, are among the biggest potential producers we have anywhere . . . and more are on the way!

When you go all the way to South America to drill for oil in the middle of a lake, you take a risk. You can't avoid it. All you can do is make sure the risk is worth while and then go ahead.

When PURE and its associates (Signal, Sohio, and Hancock oil companies) took on a 43-square-mile concession in Lake Maracaibo, they had two things in mind. One, they wanted new sources of oil to help them meet the needs of the 102 million cars expected to be on the road in 1970. Two.

they believed the Maracaibo Basin to be the greatest oil reservoir in the Western Hemisphere.

The results? Eight successful wells have already been completed, and more are underway. Added to Pure Oil's more than 5,500 other producing oil wells, they'll help motorists to be sure with PURE for many years to come. Just as you can be sure today at any of the nearly 16,000 Pure Oil dealers in 24 states.

THE PURE OIL COMPANY, 35 E. Wacker Drive, Chicago 1, Ill.



Setting Stock Signal Criteria for Maximum Gains

by Robert W. Storer 🗏

VARIOUS CRITERIA OF THE REASONABLENESS of stock prices as measured by the well-known "averages" can be developed. For some of these market cross-sections there are available earnings, dividends and—in some cases—book values, all computed on the same basis as the stock price index itself. From these are computed price/earnings ratios, stock yields, stock price/book-value ratios, and various others. Market criteria such as these relate directly to the degree of over-valuation or under-valuation of the particular average used, in terms of fundamental sources of value. Other measures, which can be used, relate to the state of the market, rather than to the valuation of the fundamentals.

Such criteria as the ratio of low-price/high-grade stock prices, the relationship between customer odd-lot purchases and sales, or between price changes and volume changes, fall within this classification. Even a simple percentage deviation of the stock price average above or below a simple long-term trend line plotted on semi-log paper can be regarded as a very rough test of critical over-valuation or under-valuation.

Before we can apply such standards to the practical forecasting of stock prices, it is necessary to select one or possibly several such criteria. It is possible to eliminate subjective judgment and to set for each criterion, or combination of them, a quantitative reading upon reaching which stocks should, in the clear light of hindsight, have been sold, and another reading at which it would have been profitable to have bought the particular average. These buy and self-indication readings might be unchanged all throughout the test period, or they may vary in a predictable way, but intellectual honesty requires that they should not be permitted to vary except in accordance with a preset formula or equation.

CRITERION OF PERFORMANCE NEEDED

In order to compare the retrospective performance of various possible single stock price criteria, and of combinations of them, we also need a criterion of such performance. It is adequate for this purpose to compute for any one "system" being tested, the percentage gains which would have been recorded by acting upon a given set of buy and sell signals, over the test period. Several turns would presumably have resulted, and the total outcome can be computed by multiplying together one plus the percentage gain secured, pro forma, for all the rises signalled.

Robert W. Storer is a vice president of The Manufacturers National Bank of Detroit. For many years his work has focussed on portfolio management, market research and monetary economics. It seems undesirable to assume, even for such purposes, that the stock index was sold short on a sell-signal, and it is unnecessary, since the relative ranking of various forecasting systems requires that we know only the total multiplication of the initial assumed capital, which would have been achieved by each one.

Such a comparison is needed not only as between various criteria of stock valuation, but also to determine the optimum setting of buy-signal readings and sell-signal readings for any one or combination of these. This is of vital importance. We may set our signals so "light", that we catch a relatively large number of market moves, but at the cost of typically receiving a buy signal well before the market has finished its decline, and correspondingly receiving a sell signal before most stock price rises have been completed. On the other hand, if we set our buy and sell signals "heavy" we may catch only the extreme cyclical peaks and troughs of stock prices (even assuming that we have a good criterion to start with) and miss a good many intermediate moves. Perhaps as practical an objection as any is that the real-life putting into practice of such a system may involve the procedure, psychologically repugnant to most equity investors, of being out of stocks for substantial periods of time, even for some years.

GENERAL OPERATIVE LAW FOUND

As a result of much testing done by the writer along the above lines, we find usually operative a general law: The best pro forma results are obtained for most yardsticks of under- and over-valuation of stock prices, when the buy and sell signals are set to signal the extreme cyclical swings, rather than to catch the maximum number of swings. In fact, the results are nearly inverse to the number of cycles correctly signalled.

The workings of this principle can be shown by the results of varying the buy-indication and sell-indication levels of a simple single-component criterion of market over-valuation and under-valuation: the ratio of actual month-end stock prices to the book value or net worth per share, extrapolated from the prior year-end values by adding the most recently reported quarterly earnings and deducting similarly the dividends paid. The stock price index used was from Standard & Poor's 425 Industrials, and the period covered was January, 1926 to date.

The following table sets out the results which would have been secured by setting various pairs of ratios of price to book value, as buying and selling points. The various alternative sets are presented ranked in descending order of results ("Number of Times Initial Capital Would Have Been Multiplied, Pro Forma").

Market Price/Book Value Ratio

Retrospective Results of Varying Buy-Sell Indication Points

	Indication nts	Spread Between Buy & Sell Indi-	No. of Cyclical Rises	Average % Gain per Cycle	No. of times Initial Capital as of 1/31/26 would have been multiplied Pro Forma by Buying & Selling in Ac-
Buy at:	Sell at:	cation Points	Signalled	Signalled	cordance with Indications
.91	2.20	1.29	. 3	256.04	25.98
1.18	1.80	.62	4	94.71	. 12.44
.78	2.27	1.49	2	334.97	12.22
1.18	1.57	.39	5	60.92	9.44
1.26	1.50	.24	7	36.44	7.85

Obviously, the setting of the buy and sell points to catch particular past cycles affects the settings and their results. Several things are worth pointing out:

- 1. There is some correlation between the "wideness" of the setting of the buy and sell-indication points as recorded above by the spread, and the results. This is what would be expected from the foregoing discussion.
- 2. With the exception of one transposition, there is a clear tendency for a superior result to be associated with the signalling of a small, rather than a large, number of rising stock price cycles. The higher average percent gain, per turn, more then makes up for the smaller number of turns signalled.
- 3. The best pro forma result, a 25-fold multiplication of the original capital is nearly five times better than the result of having maintained continuously a fully-invested position in the averages from the beginning of the period to the end of July, 1957. This improvement seems worth working to secure.
- 4. Composite criteria, composed of several statistical series embodying cyclical variables, as well as such stable growth-trend measures as the price/book value ratio used to illustrate the principle, can be devised to improve on the above performance.
- 5. A significant conclusion suggested by the results is that the major degrees of over-valuation and under-valuation of stock values, reached only infrequently, perhaps some 20 years apart, may be more recurrent and predictable than the much larger number of cycles of less extreme over-and under-valuation. Small and intermediate stock price rises and declines have historically taken place at all levels of over-and under-valuation by all measures known to the writer, and one cannot be sure by measurement of the fundamentals whether a slightly high or low valuation will continue on to great heights or depths, or will shortly reverse. Only at extremes do we tend to get a somewhat more predictable top or bottom.
 - 6. This conclusion is nevertheless qualified by the obvi-

ous fact that within any given period there have been so few such major peaks and troughs as to detract from the confidence with which their recurrence can be predicted. And we are stopped in attempting to carry back computations further either by lack of dependable data or by the realization that the economy and its markets were so different then as to vitiate any conclusions.

7. The apparent regularities noted in this report suggest the further thought that while minor variations in the valuation of stock values fall within the realm of economics, the occasional tidal waves, which are a matter of record, are probably more related to public psychology than to rational economic considerations.

Obviously the process of testing retrospectively various combinations of particular statistical series, methods of combining them and quantitative settings for sell and buy signals, must be on a basis that excludes initially the exercise of subjective judgment by the person who is doing the work. Whatever pro forma results are shown by various permutations and combinations in such systems must be on their respective merits as mechanical formulas.

No such limitations exist in the practical use of the results in forecasting the future. We may, as one extreme, present the findings of the formula as giving a buy or a sell signal, or some gradation thereof, and let it go at that. Or we may, in public print or private discussion, interpose greater or less qualification on such signals, by the intervention of subjective personal judgment. We may "override the automatic control."

If the pro forma results of the formula in the past were good, it seems to the writer that such overriding is justified only by the development of conditions in the markets, or elsewhere in the economy when it is strongly suggestive that the formula in some respects is no longer valid. For when we cease to present the formula as the basic evidence in its own right, and substitute our own judgment, we are ceasing to test the formula, and are instead testing our own personal judgment.

"The Stock Market merely reflects economic pressures. It causes neither booms nor recessions, inflation nor deflation. Its prices, high and low, are results, not causes."

-Wall Street Journal

The Federal Reserve System and Current Monetary Policy

by Dr. Reuben E. Slesinger

THE TYPICAL AMERICAN BUSINESSMAN, the financial analyst, the analytical economist—all have become unusually sensitive to fiscal and monetary policies as indicated by actions of the Federal Reserve System. This sensitivity has become especially acute since the searching analysis into the causes of the 1957-58 decline. Hence, when the Reserve System began to act to tighten money during the mid-summer of 1958, numerous questions were raised concerned with the need for and/or effectiveness of such measures.

After a period of some 10 months of trying to stimulate economic recovery through encouraging easier money, the Federal Reserve began to move in August to tighten the reins, and this despite an unemployment total approximating six millions, not counting the many more on short work weeks and reduced income. The implicit answer of the Board of Governors must be that it is fearful lest an inflationary and speculative boom is in the offing, hence action becomes necessary to curtail the rate of recovery—although surely not to curb recovery.

No one type of action alone is responsible for the introduction of tighter money reins. A series of actions, on the other hand, are culminating in this effect. To begin with, Federal financing is being looked upon in a different light. Although the expected budgetary deficit for the 1959 fiscal year probably will reach an all time "non-war year" level—approximately \$12 billion—the reason for the spending now is being dictated by considerations quite different than those prevalent six or ten months ago. The current increases in outlays stem basically from a belief that these expenditures are necessary in an international atmosphere characterized by tension and lack of trust. They do not reflect, to much of a degree, the advocacy of deficit spending merely as a pump primer to offset spending declines in other sectors of the economy.

BUSINESS OUTLOOK: OPTIMISTIC

There seems to be general agreement in the hierarchy of Federal economic policy makers that the business outlook definitely is an optimistic one and that expansionary and inflationary forces are back in the picture. Price increases in some of the basic commodities—steel, aluminum, copper—are taken as signs that the future months will witness more general price advances as the repercussions stemming from the initial price impetus mount. Although there is a considerable amount of unutilized capacity in industry—such as the some 35% in steel—official planners are fearful of the psychological effects that may be engendered by an expansionary philosophy at this time.

Dr. Reuben E. Slesinger is co-author of several books on economics and finance and also has written for national and international publications. He is a member of the management consultant firm of Gorski, Humphrey and Associates, as well as being professor of economics at the University of Pittsburgh.

One of the danger points so far as the price situation is concerned is the fact that industry is confronted with a very high cost structure, and this in spite of the declining influences of the last year. Wages and numerous other cost items currently are at high levels, and so if there is a concerted expansionary movement set into play, their future levels portend a much higher plateau. The problem is accentuated further by the fact that many of these basic industrial costs are fixed and sticky, less responsive to changing business conditions than they are to fixed institutional and contractual arrangements. In fact, many of these costs—and especially wages—kept rising all through 1957 and 1958.

In the face of this economic picture, the Board of Governors of the Federal Reserve System has assumed a position as "the fighter of inflation." The first indication of this position came in a rather subtle manner. Through changes in its open market policies, the Reserve System curtailed the availability of funds by banks for loan purposes. By selling in the open market, the Board's action had the effect of reducing the amount of funds banks have available for lending. In turn, as banks have less funds, the interest rate or cost of loan capital rises. Now, today, there is in increasing need for borrowed funds. Many agencies of government-including the Federal Treasury itself-need funds and numerous private corporations are being compelled to go to the open market for capital loans. The easy source of internal financing-undistributed profits and other forms of reserves—is no longer available as it was from 1946-1955.

MARGIN REQUIREMENTS TO 90%

Then the Board went further in its action to curb inflationary tendencies that might be engendered through speculation in security markets. Margin requirements for stock purchases were raised from 50% to 70% and finally to 90%. The increase to 90% marked the second increase in 1958. This is the first time since the end of World War II that the margin requirements have exceeded 75%. The security markets seem to have weathered this tightening rather well in spite of great concern by the Board over excessive security speculation. But, it must be remembered that the influence of this control mechanism—as is the case for so much of the Federal Reserve Board action—is highly psychological and that ramifications may extend well beyond the immediate scope of the actions themselves.

The stock market—especially the New York Stock Exchange—demonstrated a reverse pattern when a steady rise in prices followed during the last week in October and early in November (1958) shortly after the margin requirements were placed at their current rate. In the past, such as in 1946 and 1955, lower prices followed the increase in margin requirements. What the Board of Governors wishes is not so much a decline in security prices as a

slower rate of increase in these prices, less credit as a source of market speculation, and less volatile buyers in the marker

Another series of control devises recently announced by the Board of Governors center around the discount rate, the rate charged by the Reserve bangs to member banks for loans to them. The recent rise is to $2\frac{1}{2}\%$ from a former level of 2% and as low as 13/4% not too long ago. The Board hoped that this rise would not slow down the business recovery, but would act to narrow the gap between the discount rate and commercial interest rates. Even if this is true, it is likely that this increase will tighten the money market for mortgages and public and private bond issues.

AIM: TO LESSEN SPECULATION

By raising the discount rate which measures the cost to banks of money borrowed from the Reserve System, the Board hopes that banks will raise the cost of loans to their borrowers and thereby stem excessive speculation with its price inflationary influences.

As yet, there has been no announcement regarding a change in reserve requirements. An increase in these requirements has the effect of reducing the amount of monetary expansion that banks can generate through fractional deposit operations.

Before going further it should be pointed out that Reserve action by itself has its greatest influence from the psychological reactions that are generated and less from the immediate controls themselves. If business enterprisers are able to envisage a favorable marginal efficiency of capital, they will demand loan funds and invest even though the rate of interest is high. The fact, however, that more enterprisers will be compelled to go to the open market for loan funds now than formerly will give a greater play to the role of the rate of interest. But, the marginal efficiency of capital—what an enterpriser can earn on his capital—must be given full consideration at all times.

PRICES MAY RISE OR FALL

There is no certainty, bearing the relationship between the rate of interest and the marginal efficiency of capital in mind, that making money tighter and increasing its cost will stem expansionary influences and keep prices from rising by reducing the pressure for goods. Indeed, given a favorable enough margin efficiency of capital, the reverse is quite possible. Since interest changes are one of the costs of operation that the businessman seeks to recover in his price, raising this cost may serve only to increase prices further, if the marginal efficiency of capital is great enough to sustain this level of investment. A review of the period 1946-1956 shows that private capital expansion increased and prices advanced at the same time that costs of money rose. On the other side, during late 1957 and early 1958, capital expansion declined in the face of reduced costs of money. The answer is obvious. Interest rates must be related to the marginal efficiency of capital; alone they cannot act as an effective control on capital expansion.

Time alone will be able to tell whether the recent actions of the Reserve System served to regularize and stabilize the 1958 recovery or acted to curb it. At the present time, the aforementioned actions have been designed as a warning flag that the Board stands ready to act in a positive and direct manner when inflationary tendencies manifest themselves. Its feeling now is that the best time to institute such a policy is currently so as to insert caution in what otherwise might be too optimistic an attitude. So far it is testing whether making money a little more difficult to borrow will not be able to accomplish this end in a gradual manner. The Board assumes that the actions taken to date will not halt the recovery, pointing out that the needs of the nation for goods and services are broadly and substantial enough to provide for a soundly geared recovery.

Further, the Board hopes to avert its experiences of 1954-56. In the 1954 recovery, few controls were adopted for some time. Finally, steps were taken in 1955 and 1956, but by that time a boom was well under way. The action in 1956, however, was so sudden and drastic—credit was tightened so much and interest rates were forced so high that the two major demanders of capital, construction and industrial expansion, curtailed their demands drastically, and the sudden decline of 1957 followed. The Board hopes now to regularize and to stabilize the recovery so that the wide fluctuations will not get out of hand.

IT'S A QUESTION OF 'TIMING'

The question now becomes one not so much whether Federal Reserve action is desirable when the conditions it aims to correct are present, but a matter of timing. Businessmen and governmental agencies in need of borrowed money already are complaining that the increased interest rates will make it more difficult to finance mortgages and capital investment programs. The Board, in justification for its timing, has pointed to the steady improvement in these sectors and contends that the recovery is not dependent solely on these industries. Further, the Board is anxious that construction be kept within reasonable bounds so as to deter uncalled for expansion in this sector.

A fundamental question that must be answered today is: Is inflation in the offing and is this the basic problem? More than likely what is present currently is a psychological inflation-so much talk of inflation, that many people assume it to be a reality. If one examines commodity prices today, few of them show any serious inflationary characteristics. The consumer price level, as reflected by the consumer price index, has remained relatively stable for some time. Further, it is unlikely that the near future will witness any commodity inflation so long as industry has as much idle capacity as at present. Unemployment continues near current levels, and firms are competing in a general buyers' market. True, some of the financial marketsespecially the stock exchanges—have shown unusual strength. But, this may be taken as a sign of confidence in the future status of business.

RESULTS OF FEDERAL BORROWING

The inflationary element that is present in these prices stems, to no small degree, from the Federal Government's fiscal position. The government's need for funds during the last three months of 1958 forced it to resort to borrowing. Borrowing, especially when financed through the

banking system, increases the supply of money. In turn, this increases the pressure of dollars against goods, with a consequent increase in prices. Investors who are anxious to hedge against the future thus turn to stocks and bid up their prices. Bonds, on the other hand, become less desirable. An important element must not be overlooked in this line of reasoning—the pressure of money against goods has differing results depending on the status of unused capacity at the time.

Regardless of the status of financial markets or other prices it is imperative that public policy be cautionary. Sudden changes in monetary and fiscal policy have a way of disrupting the economic system far out of proportion to their intent. Federal Reserve action that tightens credit too far easily could interrupt, stifle, and destroy the current recovery. And this type of action, once under way, tends to snowball and it is most difficult to stem until it has run its course of recessionary and depression influences. It would not take very much by way of increased costs of money to turn the tide of capital spending downward again. With such a situation, recovery is unlikely and probably impossible.

In spite of the increase in margin requirements to an all time post-World War II high and the increase in the discount rate, it is improbable that the Reserve System will go to the extremes that it did by way of tightening money as in 1955 and 1956. The existence of a considerable amount

of excess industrial capacity alone will act as a curb to excessive expansion. Many companies are shying away from borrowing as much as possible, floating loans only when essential for working capital to help finance the replacement of depleted inventories. There is very little evidence of businessmen borrowing for speculative purposes in anticipation of future price advances.

U. S. TREASURY SUFFERS

It is interesting to note that one borrower peculiarly hurt by the current money market situation is the United States Treasury itself. The market for federal bonds has suffered one of the most drastic declines in its history. Long-term Treasury bonds recently dropped to new low levels. Since many of the normal long term lenders—pension funds, trusts and estates, banks and other financial institutions, and insurance companies—have suffered on account of this decline, it is unlikely that they will be in the market now for further long-term federal securities.

Hence, the Treasury will be compelled to resort to short-term financing to meet its budgetary deficits. And, the rates for such short-term securities can be expected to advance sharply. It is unlikely, however, that the Federal Reserve will go as far as it did in the years immediately following World War II by way of attempting to stabilize the market for Federal Government obligations. However, considerable action can be expected.

Newport News Shipbuilding and Dry Dock Company

Quarterly Statement of Billings, Estimated Unbilled Balance of Major Contracts and Number of Employees

(Subject to audit adjustments)

	Three Fiscal	Months Ended	Year I	inded
Billings during the period:	Dec. 31, 1958	Dec. 31, 1957	Dec. 31, 1958	Dec. 31, 1957
Shipbuilding contracts	. \$48,461,415	\$25,182,494	\$135,802,558	\$ 97,178,365
Ship conversions and repairs		7,620,979	25,230,237	35,921,292
Hydraulic turbines and other work .	. 4,470,937	6,503,425	19,554,853	21,478,27
Totals	. \$60,499,466	\$39,306,898	\$180,587,648	\$154,577,93
Estimated balance of major contracts		oer 31, 1958		ber 31, 1957
unbilled at the close of the period , ,	. \$350,	650,514	\$449	,639,228
Equivalent number of employees, on a 40-hour basis, working during the last full work-week of the period	. 11	,723	1:	2,452

The Company reports income from long-term shipbuilding contracts on the percentage-of-completion basis; such income for any period will therefore vary from the billings on the contracts. Contract billings and estimated unbilled balances are subject to possible adjustments resulting from statutory and contractual provisions.

By Order of the Board of Directors
R. I. FLETCHER, Financial Vice President

January 28, 1959

THE DIVISIONS OF THOMPSON RAMO WOOLDRIDGE INC.





Ramo-Wooldridge is responsible for advanced Hectronic sub-systems development for application with both current and projected missile programs



ortant infrared "search and track" equipment low being developed by Ramo-Wooldridge applications in modern U.S. Military aircraft



h the Boeing Airplane Co. Systems Manager ice on the U.S. Air Force Dyna-Soar project



RAMO-WOOLDRIDGE

While it is now a division of Thompson Ramo Wooldridge Inc. instead of a separate corporation, Ramo-Wooldridge remains an integrated organization for research, development, and manufacture of electronic systems for military and commercial applications. R-W's military work is covered by thirty-four contracts with the Army, Navy, Air Force, and other government and industrial organizations. These support a broad technical and-in some cases-manufacturing program in such varied fields as Electronic Reconnaissance and Countermeasures; Microwave Techniques; Infrared; Analog and Digital Computers; Air Navigation and Traffic Control; Antisubmarine Warfare; Electronic Language Translation; and advanced Radio and Wireline Communication.

In the commercial field, the well-known RW-300 industrial process control computer and associated equipment-the basis of the expanding business that The Thompson-Ramo-Wooldridge Products Company is doing with process industries-was developed and is manufactured by the Ramo-Wooldridge division.

Men, machines, and manufacturing know-how from other TRW divisions will be added as needed to build up the growing production strength of the Ramo-Wooldridge division. In other ways, too, the availability of the special skills and facilities of the rest of the corporate family will broaden the services R-W can offer to its customers. However, R-W's major systems work will continue to be done in an organizational framework that brings the engineering and manufacturing groups into close-knit project teams in the division's own integrated development and manufacturing facilities in both Los Angeles and Denver.

Ramo-Wooldridge is production-oriented in the sense that its end objective is the manufacture and sale of equipment. However, because of the highly technical nature of its product lines, the R-W division will continue to give unusual emphasis to maintaining a high degree of professional scientific and engineering competence.



The RW-300 digital control computer has broad applications in automatic process control, data reduction and test facility operation









Thompson Ramo Wooldridge Inc.

MAIN OFFICES CLEVELAND 17, OHIO LOS ANGELES 45, CALIFORNIA



Airlines, A Growth Industry

by John M. Templeton

CHART I SHOWS that gross national product of the nation increased 105% from 1945 to 1958, while Standard & Poor's Index of 425 Industrial Stock Prices increased 280%. Gross national product is an indication of the increase in sales volume for all U. S. corporations; and it is interesting that the prices of the shares of those corporations have risen more than twice as much as the sales volume.

During the same years the airline industry increased its sales volume 650% and its stockholders equity more than 400%, but the price of airline shares is almost the same now as in 1945. The great divergence shown on this chart between airline share prices and industrial share prices and between airline growth and general industrial growth gives much food for thought to students of investment values.

In 1945 airline shares sold at prices which reflected the prospects for future growth, just as today future growth is reflected in the prices of shares of many companies in other industries. That 1945 over-optimism was corrected in the following four years as the chart shows; and in the years since 1955 airline share prices were depressed while the industry struggled with the following three problems.

HIGHER FARES NEEDED

Twenty years ago the revenue per passenger mile was 5.32 cents and last year it was only 5.25 cents. This is al-

John M. Templeton is president of the investment counsel company, Templeton, Dobbrow & Vance, Inc. He is also president of four mutual funds.

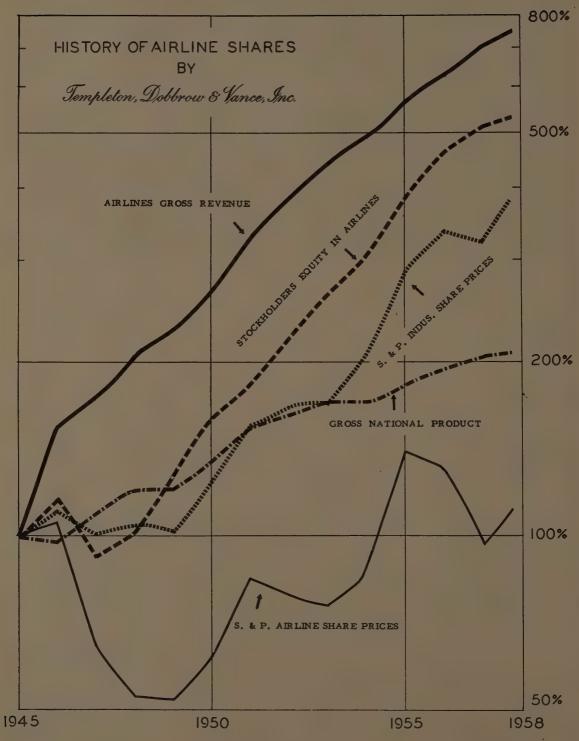
most the only industry which has not yet passed on to its customers the continual inflation in wages and other costs. In the last eighteen years the Interstate Commerce Commission has authorized fourteen increases in railroad freight rates which has put rates up 107%.

Most of the airlines have applied to the C.A.B. for fare increases and a decision is expected within a few months. In February 1958, pending the outcome of these hearings, the C.A.B. allowed a fare increase of 4% plus \$1 per ticket and a few weeks ago it allowed the airlines to eliminate the discount on round trip tickets and to revise family fare plans. While presenting arguments for higher fares, many airlines have issued pessimistic predictions and frequent stories about their financial distress. This depressing influence on share prices may be replaced after the rate case is over by favorable stories of growth prospects.

In the years from 1939 to 1957 inclusive the 12 trunk lines earned an average of 9.1% on invested capital. If they are allowed to earn that percentage in 1962, then the allowable will be about seven times as great as the earnings actually reported for 1957. Because earnings in 1958 were only about 2% of gross revenue, an additional fare increase of only 4% would double the net earnings after taxes if other factors remained unchanged.

FUNDS NEEDED TO PAY FOR JETS

In the next two years the twelve trunk lines will replace almost their entire fleets of piston engine planes with jets and turboprops. The jets will fly nearly twice as fast as the



average speed of planes now in use. This transition will cost the trunk lines nearly \$3 billion for planes and other facilities. The magnitude of this is seen by comparing it with the total net worth of \$650 million for the twelve trunk lines at the end of 1957 and total assets of only \$1.4 billion.

Most of the airlines have not yet solved this financing problem; but it will be solved by various methods during the next two years. There can be no doubt that the planes ordered will be financed in some way. The financing can be done by sale of debentures and shares if the C.A.B. allows proper fares. Otherwise the problem will be solved by subsidies, by mergers, by rental arrangements or by Congressional action of some kind, such as federal guarantees of loans similar to those authorized in 1958 for railroads. The government has never allowed any trunk line to go into bankruptcy.

The jets which cost over \$5 million each will cause increased charges for depreciation. However, the depreciation per passenger mile should not rise because on certain flights one jet can do the work of three DC 7's. When each airline introduces its new jet planes, there may be much publicity which reflects favorably on the price of its shares. Pan American flew its first jet in October 1958, and the price of its shares rose over 50% from May to November.

The new jets will fly close to the speed of sound; and more than 10 years may elapse before supersonic planes for passenger service are economic and available. Even then supersonic planes will be economic for only the longest flights. When jets fly from New York to Houston in 2½ hours there will be little extra advantage in a supersonic plane to make the trip in 1½ hours. This means that beginning two years from now the airlines may enter into a period of unprecedented stability, when they can avoid the expenses of equipment changes and gain financial strength.

MORE COMPETITIVE ROUTES

Some years ago when the major trunk lines grew strong enough to discontinue subsidies, the Civil Aeronautics Board shifted its policies towards strengthening the smaller trunk lines. Therefore, especially in the last three years, it has granted numerous new routes to these smaller airlines which compete directly with the most profitable routes of other airlines.

This competition has hurt the profits of the airlines previously flying these routes and also the profits of the new airlines struggling to gain public acceptance on those routes. This problem is likely to diminish now that the major cases have been decided except for the Florida to Texas to California route, which may be decided in 1959. There will always be many applications for new routes and many will be granted, but probably on a much smaller scale than during these three years.

Partly because of the new routes, the passenger load factor declined from 69.59% in 1951 to about 58% in 1958. Of course, this was caused also partly by the 1958 general business recession. The low point of that recession was passed in the middle of 1958; and the recovery may lead to a considerable increase in passenger traffic. The load factor is so important for airlines that even a four point increase would more than double the 1957 rate of net profits.

FUTURE PROSPECTS

The next two years is the critical time for the airlines. During this period they must solve the problems of introducing the jets and filling the seats, of paying for those planes they have ordered, and of improving safety in the increasingly overcrowded air lanes and airports.

There can be no doubt that the airline industry will continue to grow. Since 1945 airline revenue has multiplied over seven fold; and in the years ahead all studies indicate a growth rate far greater than the general business growth of the nation. There is still plenty of room for growth, because in 1957 airlines accounted for less than 4% of the total intercity passenger miles traveled in the U. S. and because total miles traveled is constantly increasing. The advantage of air travel is emphasized by the fact that a single jet plane can carry more passengers across the Atlantic in a year than can the largest ocean liner afloat. Furthermore, travel by ocean liner takes twenty times as long. Air freight is growing at an even greater rate. The president of Air Cargo, Inc. predicted recently that air freight will increase more than eleven fold in the next decade.

To prepare for jets and for growing air travel 40 U.S.

Table I

	1957 Gross Revenue millions	Price Dec. 29, 1958	Total Market Value of Common and Convertibles millions	Gross Revenue per \$1 of Market Value
Capital Airlines	\$ 94	18 1/4	\$ 26	3.62
Delta Air Lines	79	23 1/8	26	3.04
Trans World Air Lines	264	16 1/8	108	2.45
United Air Lines	282	29 3/4	112	2.33
Eastern Air Lines	262	34 1/2	. 126	2.08
Braniff Airways	63	11 3/4	35	1.80
Northwest Airlines	83	30	53	1.57
National Airlines	54	22 3/8	35	1.55
Western Air Lines	42	27 3/8	30	1.40
American Airlines	306	23 5/8	205	1.49
Northeast Airlines	16	67/8	12	. 1.33
Continental Air Lines	23	7 1/8	23	1.00
Total	\$1,568		\$791	

Table II

	20 Year Average Profit Margin	1955-7 Profit Margin	Est. 1968 Gross Revenue Per Share	Potential Earnings Per Share 1968	Price Dec. 29, 1958	. 1958 Price Divided by 1968 Potential
Delta Air Lines	6.6	4.7	155	8.70	23 1/8	2.7
Eastern Air Lines	7.9	5.6	155	. 10.40	34 1/2	3.3
United Air Lines	4.7	4.4	190	- 8.80	29 3/4	3.4
American Airlines	6.6	5. 8	92	5.70	23 5/8	4.2
Braniff Airways	4.3	3.3	63	. 2.40	11 3/4	4.9
Continental Air Lines	4.7	2.0	32	1.10	7 1/8	. 6.2
National Airlines	4.1	4.1	88	3.60	22 3/8	6.5
Northwest Airlines	3.9	4.4	103 -	4.20	30	7.1
Western Air Lines	3.5	7.6	62 ·	3.40	27 3/8	8.0
Capital Airlines	2.0	1.0	88	1.32	18 1/4	13.8
Trans World Air Lines	.9	.3	68	.40	16 1/8	40.3
Northeast Airlines	d2.1	d8.7			67/8	

airports are spending \$260 million. In the next five years the government will spend \$1.8 billion to set up allweather, round-the-clock controls on all U. S. airlanes.

What other group of growth stocks is selling below book value? Other growth stocks generally sell now from 100% to over 500% premium over book value and from 15 to 40 times peak reported earnings. The trunk line shares are presently available at prices averaging less than 10 times 1955 profits and only 3.4 times 1957 cash flow.

COMPANY COMPARISONS

Table I (preceding page) shows that the market now appraises all trunk lines together at less than \$800 million. The small size of this figure is shown by comparing it with a single company like Standard Oil of New Jersey now appraised in the market at \$11 billion or International Business Machines now appraised at \$6 billion. In fact, the whole airline industry has a smaller market appraisal than Atchison Railroad which is a small part of the railroad industry.

Table I compares the gross revenue of each airline with the market value of its shares. The final column shows that \$1 paid for shares will purchase \$3.62 gross revenue in Capital Airlines, \$3.04 in Delta Airlines and \$1.00 in Continental Air Lines.

Table II presents some arbitrary and simplified computations to show what each airline could earn if rate regulation and industry conditions prove to be about the same in the future as they were in the past. The federal law regulating rates was enacted in 1938; and since that time the airlines have been permitted to earn an average of 9.1% on invested capital and an average of 4.7 on gross revenue. In Table II we have estimated the possible gross revenue per share for each trunk line and then arbitrarily assumed that earnings might be half way between the twenty year profit margin and the three year profit margin shown in columns one and two. The final column of Table II shows the relationship between market prices now and possible earnings ten years ahead computed in this simplified manner.

The estimates of gross revenue 10 years ahead in Table II allow for a 50% increase in shares outstanding in all cases except American, United, Braniff, and National. In those cases it is probable that the jets can be paid for without having to sell more shares. The computations in this table must not be taken as predictions, because no one can possibly foresee what will happen to each of these airlines that far ahead. Nevertheless, the computations may be helpful in showing which of the airline's shares can be bought at the lowest price in relation to future potential.

FEDERAL PAPER BOARD CO., Inc. Common & Preferrea Dividends:

The Board of Directors of Federal Paper Board Company, Inc. has this day, declared the following quarterly dividends:

ber 29, 1958.

Dividends on the 4.6% Cumulative
\$25 par value Preterred Stock are payable March 15, 1959 to stockholders
of record February 26, 1959.

ROBERT A. WALLACE
Vice President and Secretary
December 16, 1958
Bogota, New Jersey

Harbison-Walker Refractories Company

Board of Directors has declared for quarter ending March 31, 1959, DIVID DEND of ONE and ONE-HALF (1½%) PER CENT or \$1.50 per share on PREFERRED STOCK, payable April 20, 1959, to shareholders of record April 6, 1959.

Also declared a dividend of \$.45 per share on COMMON STOCK, payable March 2, 1959, to shareholders of record February 10, 1959.

Pittsburgh, January 8, 1959

CONSOLIDATED NATURAL GAS COMPANY

30 Rockefeller Plaza New York 20, N. Y.

DIVIDEND No. 44

THE BOARD OF DIRECTORS has this day declared a regular quarterly dividend of Fifty-Two and One-Half Cents $(52\frac{1}{2}\epsilon)$ per share on the capital stock of the Company, payable February 16, 1959 to stockholders of record at the close of business Januarv 15, 1959.

JOHN MILLER, Secretary

December 10, 1958



In yet another important industry . . .

TRANSISTORIZATION SLASHES 'EXCESS BAGGAGE' COSTS

Fuel must be found to fire your furnace, light your oven and power your car, train or plane. World petroleum consumption exceeds four and a half billion barrels per year and it's climbing. As old oil fields are depleted, new ones are being sought in distant corners of the world. TI's new all-transistorized seismic amplifier gives oil hunters more freedom of movement. In their constant search through jungles, swamps, snow fields, and mountains less weight pays dividends.

Designed for use far off beaten paths, this basic detection instrument is well over 100 pounds lighter than previous fragile, bulky vacuum tube systems! What was a heavy load for three men has been shrunk to a reasonable pack for one... fitting in a normal-size suitcase. For power, one lightweight, quickly rechargeable battery replaces several heavyweights.

Thus another important industry is helped by reduction of equipment size, power, weight, and

maintenance brought by the transistor. Fittingly, TI's recent transistor progress has now benefited TI's original and continuing activity—geophysical exploration for oil—to lighten the physical load of today's wider-travelling oil prospector.

Designed and manufactured by the Industrial Instrumentation division of Texas Instruments, this first all-transistorized seismograph amplifier contains 677 transistors and other semiconductors made by the TI Semiconductor-Components division. It will be used all over the globe by oil exploration contractors including the world's largest, Geophysical Service Inc., a TI subsidiary. Through teamwork like this, Texas Instruments continues to expand technical horizons for defense and industry—in transistor applications, in geophysical exploration, instrumentation and data handling, and in optical and electronic component and systems development.

TEXAS INSTRUMENTS

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6000 LEMMON AVENUE Dallas 9, Texas

A Corporate Officer Analyzes His Financial Analyst Friends

by Robert A. Weaver

THE INFLUENCE OF THE ANALYST has grown so much in recent years that it can now safely be called a profession. It has been a great experience to watch the growth and importance of the financial analyst's work from year to year. I have spoken to analyst societies in New York, Boston, Philadelphia, Cleveland, Chicago, St. Louis, Los Angeles—and in some cases more than once. As a matter of fact, I was a co-founder of the Cleveland Chapter. Consequently I have had a good chance to observe the searching questions and intelligent approaches made by many analysts.

As a criticism of the approach made to company officers by some analysts, I should say that the questions, in many cases, have had too much to do with the history of the company rather than its current position or its immediate and long-term possibilities. I read some time ago that the "Who behind the Balance Sheet usually is more important than the What." That brings up the question of how to analyze management—a difficult problem. Many boards of directors and many thousands of stockholders have been trying to do that, more or less unsuccessfully, for a long time. However, I hope to make a few suggestions that may be helpful.

Many readers of this article who have been patient enough to listen to my talks in the past years will probably remember that I have almost always spoken about the subject "Business Has Wings." This idea first came to my attention in the early '30s when an article in The Atlantic Monthly pointed out that products were being constantly outmoded and that management which was not bringing out greatly improved or new products would wake up some day to find their business gone. It is interesting to note in that particular article the suggestion that it might not be too long before ice boxes would be replaced by electric refrigeration.

TYPE OF QUESTIONS IMPORTANT

It would seem to me that the analyst could prepare a series of questions to present to management that would have to do with the new products that the company has brought out in recent years, the history of those new products, both the successful ones and the ones that failed. Obviously, the company that had been on the ball, and brought out successful new products regularly, presumably could be counted on to continued to do so.

The question of success of new or improved products depends a lot on the imagination involved in a management's philosophy. Westinghouse some years ago coined a fine new word called "Imagineering"—a combination of imagination and engineering. That is an essential attribute,

Robert A. Weaver, board chairman of Ferro Corporation, is also a director of U.S. Slicing Machine Co., the National City Bank of Cleveland and Jack & Heintz Co. Mr. Weaver holds a B.S. and a LL.D. degree from Kenyon College, and a D.Sc. degree from Alfred University.

it seems to me, of management destined to be successful in the future.

Encouraged by the Westinghouse invention of new words, I thought up the word "Resurgency," which I have been unable to find in the dictionary. It is rather obviously a combination of urgency and research. Research is a pet word with the financial fraternity, and most companies glibly tell the percentage of their sales that are spent on research, or the number of square feet that they use for research, or the number of employees they have in their research and development departments. It is generally conceded that it is very difficult for management itself accurately to check the results of their individual company's research.

It is certainly true that most research organizations do not have the feeling or urgency about their work. It seems to me that too many of them look on their work as just a group of interesting problems that they hope some time will work out successfully. Most of them do not realize (and I think they could be made to realize) the fact that the very existence of their company, and the very existence of their job may depend on their putting the same fight and the same ambition, and the same hard work into their research and development problems that any successful production or sales organization has put into its problem. The urgency of research, and in fact the urgency of many other phases of business, is much more developed now than some years back.

"TIME OF THE ESSENCE"

There was a time when, after evolving an idea or invention, a man (or company) could spend a lot of time on development work, and then slowly start promoting sales. The process of bringing a product from the idea point to the profit point usually took a great many years in earlier times. However, today you can be pretty well assured that some other fellow has worked on your same idea, and that he may be working night and day while you are only working days. When he gets a really good idea he will find there are many companies interested in new products, and that he can find a willing ear to put his product on the market. In this day the use of mass advertising in the form of magazines, newspapers, television, and radio makes it possible for a company to create a market almost overnight for a new product that is basically right, and that is priced right. You don't have time to do things slowly or

It seems to me there is a cooperative problem between management and analysts to figure out some way that the analysts can become acquainted with the largest possible segment of each individual management. In our company we make it a point to have analysts meet as many of our department and division heads as possible, and certainly have them meet our top officers. A good analyst could easily develop a series of questions to ask our various officers that would give the analyst an indication of the officers' attitudes about the progress of their company.

You will recall the old saying that each company is the length and shadow of its president; but the business tempo has so increased that this statement should be no longer true. Any company that is too highly dominated by one man has the essence of real weakness. Actually a business team can be very well likened to a football team. There are a number of different positions on the team, each of which has to be filled by an expert who knows his business and knows it a little better than his team mates and (it is hoped) his competitors. Naturally there must be a captain to call signals, and there is also the necessity of having a coach. Here is the place for the so-called corporate elder statesman. The head of any company must have a definite plan of transferring responsibilities to a variety of executive shoulders, and of having his right-hand man especially trained in the long-range problems and prospects of the company.

ANALYZE THE MANAGEMENT

The experienced analyst shouldn't have to take up much company time on the question of past financial records (and usually the current year's records are also available without consultation), so that leaves the analyst's chief job, in my opinion, the task of finding out whether management is alert; whether it believes in "imagineering" and "resurgency"; what its record has shown in the development of new products, as far as profits are concerned; and what its plans are for future new products.

In our particular company we have built an excellent group of managers for our divisions, and for each division we maintain a monthly profit and loss statement for review. We have also planned that there should be at least one man in the division under the manager capable of

taking over the manager's duties in case of any emergency. We have found that managers in our foreign divisions get exceptional training because they have a lot of functions to attend to that are taken care of for the domestic managers by the home office.

Quite obviously the company has to have a plan for new blood, and it has been our plan to search the colleges for the unusual fellows that not only get good grades but have shown an interest in outside activities. Somehow or other this type of man, or at least a sufficient percentage of them, improves with business training to the point where he can first be made a field man, then perhaps an assistant manager, and finally a manager of a division.

Our company has also had a policy of making all promotions from within; and it is only under very unusual circumstances that we go outside for a new man of any particular stature. Sometimes we have to do this when we are going into a new business where our own people do not have sufficient experience. We also have a good method of constantly checking salaries to see if they are adequate, have a good bonus system, have a pension and insurance plan that seems adequate, and on top of that have a stock option plan for some of the top men.

In conclusion, it seems to me that the following constitute the most important items that should be checked by an analyst to get a real appraisal of the future potentiality of any company. Let's summarize the points I've tried to make:

1—The unseen element in the balance sheet: management; depth of the particular management; and the company policies which will retain a good management.

2—"Imagineering" and "resurgency": Does the management fully appreciate its importance for a long-term run?

3-Attitude of management toward new products and new methods of presentation, for the present and the future.



DIVIDEND NOTICE

Chicago - At a meeting of the Board of Directors of Amphenol-Borg Electronics Corporation held today a quarterly dividend of thirtyfive (35c) per share was declared, payable March 30, 1959, to the shareholders of record at the close of business March 16, 1959.

FRED G. PACE, Secretary

January 12, 1959



The Board of Directors has declared this day COMMON STOCK DIVIDEND NO. 98

This is a regular quarterly dividend of

25¢ PER SHARE

Payable on February 16, 1959 to holders of record at close of business January 20, 1959.

> Milton C. Baldridge Secretary January 8, 1959

THE COLUMBIA GAS SYSTEM, INC.



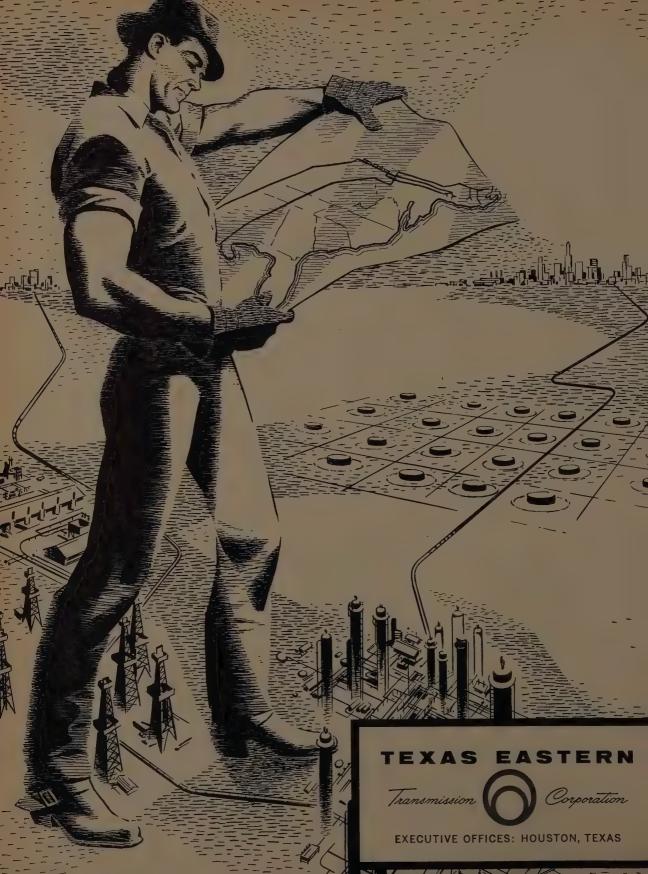
OUTBOARD MARINE CORPORATION

DIVIDEND NOTICE

The Board of Directors of Outboard Marine Corporation, at its meeting held today, declared a cash dividend of twenty cents (20c) per share on the Common Stock of the Company, payable February 25, 1959, to stockholders of record February 2, 1959.

H. M. FISHER, Secretary

January 16, 1959.



THIS IS

TEXAS EASTERN

...a many-sided operation

In February, 1947, Texas Eastern was incorporated—to buy the war-built Big Inch and Little Big Inch pipelines and convert them to natural gas transmission. Since then, our interests have greatly broadened and expanded.

Our Gas Division today operates a 6000-mile pipeline system spanning 15 states between Mexico and New England. It supplies more than two billion cubic feet of natural gas a day for use in millions of homes and thousands of factories.

Our Little Big Inch Division with its 1800mile pipeline system—operates one of America's biggest petroleum products common carrier pipelines. It links Gulf Coast and Mid-Continent area refineries with major Midwest marketing areas.

Our Oil Division, which includes La Gloria Oil & Gas Company, explores extensively for oil and gas; has 410,000 acres under lease and interests in more than 800 producing wells; custom refines auto and aviation gasoline and other special fuels at its ultramodern refinery and operates extensive gas processing facilities.

All of these operations have made Texas Eastern a truly diversified company—broadening its service to consumers of oil and gas as well as to the people who produce and process them.

TEXAS EASTERN TRANSMISSION CORPORATION

OIL AND GAS: Exploring and Producing
NATURAL GAS: Processing and Transmitting
OIL PRODUCTS: Refining and Transporting



Financial Analysts Seminars

by A. Hamilton Bolton

WE BOARDED THE PLANE in Montreal, and by noon were at Chicago's Midway airport. We were en route to the 1958 Financial Analysts Seminar held each year, in the third week of August, at Beloit College, Beloit, Wisconsin. "We" included a majority of the Montreal delegation, and consisted of Jim Reid of the Bell Telephone Co. of Canada, my partner Guy Giguere and myself.

My thoughts as we travelled by air were undoubtedly not the same as my confreres. As a regent of the Seminar, and in particular as chairman of the Board of Regents, my thoughts were geared to such questions as: Will the program this year be as good as it appears on paper? Are we making any improvements this year? Can it possibly keep up the high standards of 1956 and 1957, and perhaps less importantly, can we hope to have the excellent weather that has been our luck in prior years?

Stopping in Toronto on the way, we picked up one member of that Society's contingent, Martin Lindsay, of McLeod, Young, Weir & Co., Ltd.

Arriving in Chicago, the first task was to move over with our paraphernalia to North Central Airlines and make sure that our "confirmed" reservations were really confirmed (this from past experience, I may add). No such luck, but we did have "priority"! Or did we?

After standing around, at about 2 minutes to plane time, we were on, with apparently a good part of the plane content in the same boat and headed for the same spot! At the Beloit airstrip we were met as usual by our genial Director Marshall Ketchum, and a contingent of taxis.

Monday dawned clear and bright. The Seminar opened at 9 a.m. and Les Chandler kicked off with a learned attempt to bring Monetary Policy into the reach and grasp of the top practicing analyst. (Lester Chandler is Professor of Economics at Princeton University and has, in 1956 and 1957, distinguished himself in analyst circles at the Seminar under similar assignment).

Those of us who have attended a Financial Analysts Seminar—and in particular perhaps those of us such as Dutton Morehouse, Bill Norby, Marshall Ketchum and myself, who have been fortunate enough, through force of circumstances to have been able to take in all the Seminars—do not have too much difficulty in appreciating what the Seminar means.

First, the concept of the Seminar was originally advanced by Dutton Morehouse of Chicago, past president of the National Federation. Around the time of his presidency, he became the first Chairman of the Board of Regents. It was fortunate indeed that Dutton came from the Windy City, because there, geographically speaking, he was able to explore the possibility of setting up, under the aegis of the University of Chicago, a one-week melting pot of concentration of ideas between the professional economist and the practising analyst, and have it located within access of all member societies.

This Seminar is, by all standards, a two-day affair. This is no trade school nor training ground for junior analysts. This is a seminar where all hundred registrants are expected to pull their weight and contribute as much to the general discussion as do the 15 "wise men" who comprise the lecturing staff. It is, I believe, significant that rather than have the professors grade the students, at the Seminar the registrants grade—and this in no uncertain terms—the lecturers.

The organization of the Seminar is relatively simple. The program is divided into two sections: Analysis of the Economy and the Methodology of Security Analysis, with approximately equal time devoted to each. It has been, since the commencement of the Seminar in 1956, our objective to provide a well-balanced program which would take into consideration not only the theoretical aspects of how the economy functions but also, by appropriate study, how in practice we may attempt to learn "to do it yourself"—a quite different approach.

Of all activities of the National Federation of Financial Analysts Societies, the annual Seminar is the one which, in future years, may well have proven to have produced the greatest good so far as the analyst movement is concerned.

To those of you qualified analysts who have not yet "partaken of the fruits", may I suggest a more positive approach: get your application in for the 1959 Seminar to be held in the week starting August 23rd. You should be receiving details in very short order.

A. Hamilton Bolton, a senior partner of the Canadian investment firm of Bolton, Tremblay & Co., is executive vice president of the National Federation of Financial Analysts Societies. He will be host chairman of the 1959 Analysts' Convention in Montreal next June.



HOOKER CHEMICAL CORPORATION REPORTS FOR 1958

ACHIEVEMENTS FOR A GROWING FUTURE

Expansion and Diversification in the U.S.—Consolidation with Shea Chemical Corporation enlarges Hooker's base in phosphorus chemicals—expansions elsewhere.

In Canada—First full year of operation for Hooker Chemicals Limited, North Vancouver, B.C., Canada's only chlorine-caustic soda plant west of the Rockies.

Entry into Chemicals for Rocket and Missile Propellants— Through HEF, Inc., jointly owned with Foote Mineral Company, with new plant about to begin operations.

New Chemicals and Plastics—introduced successfully during the year provide additional penetration into growing markets.

Hooker Research Center—\$3,500,000 laboratory of the most advanced design, to be occupied in early 1959, planned for expansion as needed—our investment in the future.

HIGHLIGHT REVIEW

Combining Hooker and Shea Fiscal Years Ended November 30

	1958	1957
Net sales and other income	\$126,325,225	\$129,268,937
Profit before income taxes	20,135,703	21,885,536
Estimated income taxes	9,496,265	10,701,339
Net profit	10,639,438	11,184,197
Dividends paid	7,094,639	6,672,173
Earnings retained in business	3,544,799	4,512,024
Working capital	34,148,990	31,305,103
Current ratio	2.9 to 1	2.5 to 1
Gross plant and equipment	157,080,522	150,547,143
Net plant and equipment	96,762,326	96,921,445
Long-term debt	40,500,000	42,395,344
Shareholders' equity	88,227,904	84,676,581
Common shares outstanding	7,304,576	- - 7,302,262
Earnings per common share	\$1.43	\$1.50
Dividends per common share	1.00	1.00
Book value per common share	11.39	10.91

Detailed Annual Report, including an 8-year financial summary of Hooker and companies acquired through consolidation, will be sent on request. Please address Secretary, Hooker Chemical Corporation, 41 Forty-seventh St., Niagara Falls, N. Y.

HOOKER CHEMICAL CORPORATION and subsidiaries

with corporate headquarters located at Niagara Falls, N. Y., employs approximately 5000 persons at all of its facilities in the United States and Canada, comprised of:

CHEMICALS	PLANTS: Niagara Falls, N. Y. (operations headquarters); Columbus, Miss.; Montague, Mich.; Tacoma, Wash.
	SALES OFFICES: Niagara Falls (headquarters), Tacoma (western headquarters), Chicago, Detroit, Los Angeles, New York, Philadelphia, Worcester, Mass. (Marble-Nye Company).
	RESEARCH LABORATORIES: Exploratory-Research Center, Grand Island, N. Y.; Applied Research-Niagara Falls.
	Bulk Terminals: Chicago, Ill.; Weehawken, N. J.; Wilmington, Calif.
DUREZ PLASTICS DIVISION	PLANTS: North Tonawanda, N. Y. (operations headquarters); Kenton, Ohio; Spokane, Wash. SALES OFFICES: North Tonawanda (headquarters), Chicago, Detroit, Kenton, Los Angeles, New York, Philadelphia. RESEARCH LABORATORIES: Exploratory—LeRoy, N. Y.; Applied Research—North Tonawanda, N. Y.
PHOSPHORUS DIVISION	PLANTS: Jeffersonville, Ind. (operations headquarters); Adams, Mass.; Columbia, Tenn.; Dallas, Texas. SALES OFFICES: New York (headquarters); Jeffersonville; Marysville, Ohio.
CANADIAN SUBSIDIARY	HOOKER CHEMICALS LIMITED-PLANT AND SALES OFFICE: North Vancouver, B.C.
JOINTLY OWNED	HEF, IncPlant: Columbus, Miss.; Sales Office: Philadelphia.
COMPANIES	Solar Salt Company—Plant: Grantsville, Great Salt Lake, Utah; Sales Office: Salt Lake City.

Growth Stocks and the Chemical Products Industry

by Dr. Robert E. Kennedy, Jr.

DURING THE PAST DECADE, growth stocks have attracted widespread attention as a separate and unique class of common stocks which are distinguishable from income and cyclical stocks by the presence of several discernible characteristics. In recent years a considerable volume of literature has been published recounting the merits, risks and expectations of investment in this unique class of common stocks. Even a greater volume of information pertaining to the superior features of specific growth equities has emanated from the offices of stock brokerage firms as sales literature.

But despite the existence of a sizeable literature, only a small number of published articles have attempted to explore the theoretical dimensions of the subject of growth stock values.\(^1\) The present state of knowledge reflects a paucity of adequately formulated theory by which the behavior of this class of common stocks can be explained and evaluated. Moreover, no basis of general agreement seems to have developed in solving the complex problems of selection, timing and pricing of growth securities.\(^2\) In general, it is probable that we are now passing through the "natural history" stage of descriptive inquiry, in which significant empirical studies of growth stocks are being conducted by financial analysts but very little is yet being attempted in the more hazardous areas of generalization and theory.

The object of this article is modest. It makes no claim to theoretical formulation. Rather, its purpose along descriptive lines is to examine a noted "growth industry," and in this case the chemical products industry, from the standpoint of its behaviorally significant investment characteristics. In pursuing this aim, the inquiry will break down into component areas. First, the significance and limitations of the "growth industry" approach to the selection of common stocks will need some explanation. Second, the salient characteristics will be postulated by which we believe that growth stocks as a class may be identified. Third, the statistical findings of a case study of the chemical products industry⁸ will be summarized and presented in tables.

In particular, the comparative investment performance of several leading chemical stocks will be developed to illustrate the nature of investment results that have been produced by a "growth industry" from the standpoint of longterm ownership.

Finally, quantitative criteria of growth stocks will be suggested, and will be employed in this article as a guide to classifying each chemical stock examined as to whether it has exhibited the distinguishing investment characteristics of a growth stock. As measured by the quantitative criteria, the study will provide evidence that a majority of the

chemical stocks examined have clearly attained the postulated level of growth stock performance. It should be noted that conclusions developed as to the investment performance of the chemical stocks pertain only to their long-term past records, and are not intended as a forecast of the future potential of these specific securities. However, as a general proposition, we believe that a knowledge of the past performance and present position of particular growth stocks is a useful and intelligent guide to a forecast of their future potential. After all, any reliable estimate of common stock values must be based on past and current information and probable expectations.

GROWTH INDUSTRY APPROACH

The "growth industry" approach is a widely-adopted method of selecting common stocks for investment. This approach proceeds on the observation that growth companies and, therefore, growth stocks are situated in the most dynamic and progressive industries. There is much truth in this observation. This explains why copious attention, in brokerage and investment literature, is focused on the outstanding "growth industries"-such as, petroleum, chemicals, electronics, aircraft, paper, rubber, instrumentation, office machinery and atomic energy, to name a few wellknown examples. Several of the investment trusts and counselling services use the "growth industry" approach extensively in the selection of common stocks. Along similar lines, Mead and Grodinsky have expressed the extreme view that "beside the selection of the industry, other considerations of investment are unimportant."4

The "growth industry" approach, employed in selecting high-performance stocks, is a good starting point. But beyond this point, if used without consideration for other equally important analytical factors, this approach can lead to serious errors of judgment. Many well-intentioned investors leap to the unwarranted conclusion that all or most companies operating in "growth industries" are, by logical implication, growth situations in their investment significance. This line of reasoning is shot with dangers. Not all companies operating within the orbit of "growth industries" are, by any means, growth situations in the investment sense. Although some companies may be growing very rapidly as a result of participation in dynamic industries, other participating companies may not be progressing any faster than their counterparts in "maturing industries". Thus, some companies which are situated in "growth industries" and which seem to possess growth characteristics are unable to translate these factors into rapid and sustained growth of corporate earning power.

Also, there is the complex problem of what investment values to attach to different growth rates of stocks which merely represent a single "growth industry". Here, the perplexing problems of pricing are encountered, owing to the fact that, even if reasonable investment values can be cor-

^{1.} Footnotes appear at end of article.

Dr. Robert E. Kennedy, Jr. is an assistant professor of finance at the University of Arkansas and a partner in the Palmer-Kennedy Organization, specialists in stockholder and financial relations, Dallas, Texas.

related with the estimated rates of past growth, there is no assurance that future growth of these stocks will approximate the past record. Thus, what appropriate investment values to place on expected future growth is almost a total mystery. As a final danger, it is reasonable to assume that all "growth industries" will, at some time during their life cycles, reach a condition of maturity and stagnation. But when this condition will be reached is an imponderable question. In view of this prospect, whether near or distant, corporate management must remain constantly alert for new growth opportunities if continuing growth of earning power is to be perpetuated. In any case, there exists a formidable array of problems which makes growth stock analysis extremely complicated even when the "growth industries" seem properly identified for prospective investment.

CHEMICAL PRODUCTS INDUSTRY

The chemical products industry is often cited as a classic example of a "growth industry". Today, as in the past, this industry is widely recognized for its impressive growth characteristics and dynamic technology. Indeed, its performance record, in terms of physical productivity and earning power, has been remarkable over the past several decades. For example, the physical output of chemicals has expanded almost eight times above the industry's output in 1929, whereas physical output for the nation as a whole has advanced by less than 150% over this same period of time, as measured by the Federal Reserve Board Index of Industrial Production. During 1957, the sales volume of the chemical products industry reached a total of \$24.4 billion, which was a 7% advance over 1956 and a two-fold increase over 1946. During the past year, the industry spent a record-high of \$1.8 billion in capital investments, as compared to \$1.4 billion during 1956. Nearly \$500 million was plowed into research and product development last year, an activity which is estimated to produce around 400 new products yearly, on average, from corporate expenditures on chemical research.5

The longer-range prospects for the chemical products industry still remain attractive. The favorable outlook stems from the expectation of a continuing rapid rate of innovation, even greater stress on research and product development, the penetration of new scientific frontiers, and the creation of new and broad markets. As everyone knows, chemistry is coming to play an ever-increasingly vital role in industrial, scientific and military projects. We are now launching the "missile age" in which chemistry is developing high energy fuels for rockets and missiles and is contributing to other areas of militarily significant technology.

In the bull markets since 1946, common stocks which represent the chemical products industry have tended to sell on the basis of very high price-earnings multiples. This is still true today, a circumstance which suggests that the stock market continues to forecast very substantial growth ahead for the chemical industry generally. But, as we observed before, what rate and duration of growth will be in store for the industry are unknown quantities. We know only that the stock market reflects a considerable degree of enthusiasm concerning the favorable long-range prospects for this equity group.

GROWTH CHARACTERISTICS CITED

The chemical products industry is of special significance as a "growth industry" because an empirical study of its past performance suggests the presence of several important growth characteristics which may be derived and which are useful as guides to the identification of growth stocks generally. As a study of this industry suggests, the pivotal characteristic of growth stocks is rising and sustained per share earning power which, in accordance with the operation of compound interest, tends to increase at a substantial rate of growth over a very considerable period of time. Three separate groups of growth characteristics are casally linked with high and rising earning power. In the order of causal sequence, these groups are designated as (1) fundamental, (2) financial, and (3) investment characteristics of growth stocks, which taken together, are postulated as a descriptive framework of growth characteristics in terms of which growth stocks as a class can be identified.

The fundamental characteristics of growth stocks are postulated as the ultimate determinants of high and rising earning power. These are the dynamic background factors which are not amenable to quantification; instead, their impact on corporate earning power must be deduced from the corporate operating and financial records. Research and product development is among the most important of the fundamental characteristics of growth companies, because this activity makes possible an unending stream of new products and processes. In turn, this frequently leads to technological innovation, expansion of plant and equipment, and the creation of new markets.

The competitive superiority of growth companies is typically manifested by dominant size in the industry, by control of important patents and trademarks, by the investment of large sums of capital, and by the possession of outstanding managerial and technical skills. These protective devices have the combined effect of virtually eliminating easy entrance into the industry by outside firms. Substantial control over essentially underdeveloped markets, inducing periodic expansion of productive capacity, is secured by the dominant firms operating in growth sectors of the general economy. Finally, the coordinating point in this industrial growth process is aggressive and risk-taking management. This type of management is constantly alert to rewarding growth opportunities, and in fact, makes its own opportunities by diversifying into other established dynamic industries or by creating new industries through emphasis on research and product innovation.

HOW THE INDUSTRY EXPANDS

These fundamental growth factors operate, in their causal impact, through the *financial* characteristics (i.e., the second group of growth characteristics) to produce such financial results as a steady uptrend in sales, the growth of financial resources and equity (book) values, a continuation of wide profit margins and high earning rates on invested capital. These financial developments, when combined with heavy plow-back of internally generated funds invested in wide profit-margin product lines, provide the basis for rapid and sustained growth of corporate earning power which expands in accordance with the principle of

Table 1

Annual Average Yield Results of Investment in Eight Chemical Stocks for Four Test Periods During the 30-Year Period (1926-55) Inclusive

Company	30-Year (1926-55)	10-Year (1926-35)	10-Year (1936-45)	10-Year (1946-55)
DuPont	24.1%	11.5%	4.0%	8.2%
Union Carbide	12.2	6.4	3.7	6.3
Dow Chemical	17.8	12.6	3.0	4.9
Eastman Kodak	6.7	5.8	4.1	4.5
Hercules Powder	16.7	8.7	5.9	4.7
Olin Mathieson	6.8	. 5.4	4.4	9.3
American Cyanamid	16.6	2.8	4.4	6.5
Allied Chemical	7.5	5.4	4.4	5.8
8 Company Average	13.6	7.3	4.2	6.3

compound interest. To illustrate, a sample of several leading companies in the chemical products industry, for the past five-year period, have produced: (1) average profit margins on sales of 25%, (2) average earning rates (before taxes) on invested capital of 25%, (3) average retained earnings (i.e., plow-back ratio) of almost 45%, and (4) compounded per share earnings growth of approximately 10% annually.

Finally, the *investment* characteristics of growth stocks, the third group postulated, are derived from, and are made possible by, high and rising earning power. As determined by the fundamental and financial factors, the investment characteristics constitute the long-range benefits obtainable from continuing ownership of growth stocks, such as (1) substantial capital gain potential, (2) above-average yield performance on investment cost. (3) share multiplication, and (4) high rates of dividend growth. Accordingly, attaining these superior results is the pragmatic test of long-term investment in growth stocks. In the remaining sections of this paper, the comparative performance of several chemical stocks will be subjected to statistical tests for the purpose of comparing their investment results with our quantitative criteria of growth stocks stated in the sequel.

PROCEDURES OF THE STUDY

In confining this study of the comparative performance of the chemical stocks to reasonable proportions, it has been necessary to establish boundaries and to make certain assumptions. At this point, we must set forth the background conditions of the study, and briefly enumerate (1) the chemical stocks in the study; (2) the time periods employed; (3) assumptions concerning our hypothetical investor; (4) the computational methods used in deriving the investment results; and (5) the quantitative criteria by which the chemical stocks are confirmed as growth securities in their investment significance.

Chemical Stocks. This study examines the performance of the following stocks representing the chemical products industry, namely: E. I. DuPont de Nemours and Co.; Union Carbide and Carbon Co.; Dow Chemical Co.; Eastman Kodak Co.; Hercules Powder Co.; Olin Mathieson Chemical Corp.; American Cyanamid Co.; and Allied Chemical Corp.

Time Periods. Each of the eight chemical stocks is subjected to four test period studies, during which it is assumed that a hypothetical investor holds the chemical stocks in portfolio continuously throughout each time period. The maximum period of holding is a 30-year period (1926-55), and is considered sufficiently long in duration as an appropriate test of the long-term investment performance of the chemical stocks. Also, three 10-year test periods, falling within the 30-year period, are developed for each chemical stock: (1926-35; 1936-45; 1946-55). Primary significance is attributed to the investment results derived for the 30-year period, while the 10-year test periods are used to develop additional information and corroborative evidence.

Hypothetical Investor. In the test period studies, we assume a hypothetical investor who makes an original commitment of 100 shares in each of the chemical stocks purchased at the market price at the beginning of each test period. He holds each security without interruption until the end of the designated test period, upon which he liquidates his investment. During each of the test periods, the investor retains all stock dividends and stock splits which are issued to him; and he exercises all rights issues which entitle him to acquire additional common stock in each of the chemical companies.

Computational Methods. The investment results of the study are derived by making five sets of computations. (1) The "average annual yield on investment cost" (note Table 1) is computed for each stock by relating its year-to year annual dividend payments to investment cost during the test period; then, by adding these annual yields on investment cost into a summated value; and finally, by dividing the total yield figure by the number of annual dividend periods embraced by the test period. (2) The "average annual capital gain on investment cost" (note Table 2) is derived by subtracting the original investment cost of 100 shares (plus the cost of exercising rights) from the total market value indicated at the end of the test period; then, by dividing this figure by the number of annual capital gain periods in the test period study, producing a dollar average figure; and finally, by dividing this dollar figure by the total investment cost of the security. (3) Since both

Table 2

Annual Average Per Cent Capital Gain from Investment in Eight Chemical Stocks for Four Test Periods

During the 30-Year Period (1926-55) Inclusive

Company	30-Year (1926-55)	10-Year (1926-35)	10-Year (1936-45)	10-Year (1946-55)
DuPont	83.1%	27.9%	3.1%	35.8%
Union Carbide	31.9	12.7	3.6	20.5
Dow Chemical	53.7	80.2	6.0	33.1
Eastman Kodak	13.4	3.3	4.3	14.8
Hercules Powder	41.8	14.0	15.0	12.0
Olin Mathieson	10.1	0.7	0.3	25.1
American Cyanamid	41.7	20.4	5.3	16.0
Allied Chemical	11.9	3.5	1.7	14.5
8 Company Average	35.9	20.3	5.0	21.5

Table 3

Combined Annual Average Yield and Per Cent Capital Gain Results of Investment in Eight Chemical Stocks for Four Test Periods During the 30-Year Period (1926-55) Inclusive

Company	30-Year (1926-55)	10-Year (1926-35)	10-Year (1936-45)	10-Year (1946-55)
DuPont	107.2%	39.4%	7.1%	44.0%
Union Carbide	44.1	19.1	7.3	26.8
Dow Chemical	71.5	92.8	9.0	38.0
Eastman Kodak	20.1	9.0	8.4	19.3
Hercules Powder	58.5	22.7	20.8	16.7
Olin Mathieson	16.9	6.1	4.7	34.4
American Cyanamid	58.2	23.2	9.7	22.4
Allied Chemical	19.4	8.9	6.1	20.2
8 Company Average	49.5	27.6	9.2	27.8

the yield and capital gain results as computed above are derived as percentage of total investment cost, then they are amenable to combination (i.e., addition) in an investment result designated (in Table 3) as "combined average annual yield and capital gain results". (4) "Share multiplication" merely refers to the number of shares above the original 100 share commitment in each stock accruing to the account of the assumed investor at the end of each test period. Share multiplication (note Table 4) arises from the retention of stock dividends and stock splits, and from the acquisition of additional common shares via rights issues. (5) Finally, "rates of dividend growth" (note Table 5) are derived by applying secular trend analysis to the build-up of yield on investment cost for each security over its test period studies.

Quantitative Criteria. In order to be classified as a growth stock under the test period conditions and assumptions of this study, each of the chemical stocks must have attained a reasonably high level of investment performance —a level of performance which at least equals alternative investment results obtained from long-term ownership of stable-income securities (viz., public utility equities). Theoretically, a stable-income equity, if acquired on a 6% purchase yield basis, and if dividends are growing at a compounded rate of 3% annually (thus merely keeping up with the growth of the national economy), would double its yield on investment cost by about the 25th year, and would thereby provide roughly 9% to 10% in average annual yield results for the 25-year period. Certainly a growth stock should be expected to perform equally well for a protracted period of time. Consequently, on the basis of yield results, our chemical stocks must have produced an average annual yield of at least 10% to 12% for the 30-year test period in order to be classified as growth stocks. In regard to capital gain results for the 30-year period, it is arbitrarily estimated as quantitative criteria that a growth stock should have produced average annual capital gains in the order of 10% for the 30-year period. Thus, on a combined yield and capital gains basis, a growth stock should be expected to provide an average annual return above 20% over a considerable period of time. Many of the chemical stocks examined in this paper have far exceeded this norm.

The 10-year test periods under which the chemical stocks are examined pose a different problem in the development of quantitative criteria. A period of one decade is almost too short in duration as an appropriate test of the longrange benefits to be expected from growth stocks. For example, a common stock whose purchase yield is 3% must grow at a compounded rate of dividend growth of 10% annually in order merely to produce average annual yield results of 5% on investment cost. No many growth stocks have demonstrated such rapid rates of growth. Accordingly, a growth stock with a low market yield at the time of purchase will require a period of ownership considerably longer than one decade (unless associated with very rapid growth) in order to equal or overtake the results produced by an alternative commitment in a slow-growth income equity. Recognizing this limitation, only secondary emphasis will be placed on the investment results developed for the chemical stocks under the three 10-year test period conditions. These results will be considered as additional evidence in classifying the chemical stocks as growth securities in connection with the 30-year test period.

Finally, a growth stock should be expected to grow significantly faster than the national economy. As quantitative criteria, this means that the growth rate of per share dividends should be rising at a rate substantially in excess of 3% compounded annually in order that a common stock be classified in this paper as a growth situation. Moreover, in the case of the chemical stocks examined, the rate of growth must have been sufficiently rapid to have produced satisfactory average annual yield results during the 30-year test period.

1. Dividend Yield Results.

Table 1 presents the yield results of long-term investment in the chemical stocks. The yield results derived in connection with the 30-year period are decidedly superior to the results derived for the shorter time periods. This should be no surprise since this period covers three decades of continuous holding of these stocks by our "investor" and since it coincides with a long span of sustained growth by the chemical products industry. This 30-year period is

Table 4

Share Multiplication and the Number of Rights Issues, Stock Dividends and Splits of Eight Chemical Stocks for the 30-Year Test Period (1926-55)

	Numbe	r of Times	Issued	Number of Shares Owned	
	Rights Issues	Stock Dividends	Stock Splits	as of 12-31-1925	as of 12-31-1955
DuPont*	2	1	5	100	2,892
Union Carbide ` [1	0 `	2	100	972
Dow Chemical	8	7	2	100	16,515
Eastman Kodak	2	6	1	100	889
Hercules Powder	1	0	3	100	1,760
Olin Mathieson	2	2	1	100	1,233
American Cyanamid	4	0	4	100	18,000
Allied Chemical	0	3	1	100	462

^{*}Includes General Motors stock, as a result of a special stock distribution to DuPont stockholders in 1935.

Table 5

Approximate Annual Average Percentage Growth Rates of Yield on Investment Cost for Eight Chemical Stocks for Two Test Periods

Company	30-Year (1926-55)	10-Year (1946-55)
DuPont	7.0%	13.0%
Union Carbide	6.0	9.0
Dow Chemical	10.0	16.0
Eastman Kodak	2.0	9.0
Hercules Powder	6.0	6.0
Olin Mathieson	4.0	13.0
American Cyanamid	10.0	14.0
Allied Chemical	3.0	4.0
8 Company Average	6.0	10.0

especially interesting because it embraces the entire spectrum of general economic conditions: protracted peacetime and war-induced booms; long and paralyzing depression; and "profitless prosperity" of war itself. Within this shifting economic environment, the chemical products industry has not only survived in the face of calamity but, in fact, has exhibited rapid (although erratic) growth throughout the entire period. That is, the chemical stocks have not moved in a smooth upward trend, but rather by "fits and starts" reflecting the sharp oscillations of the economic system over this span of years. Reference to Table 1 indicates that substantial variations in average annual yields exist among the chemical stocks during each of the test period studies. These variations in yield results are functions of the different growth rates and initial purchase yields of the chemical stocks. Thus, some of the chemical stocks produced remarkable results because a reasonable purchase yield was combined with exceptionally fast rates of dividend growth. Partly accounting for the spectacular success of the chemical stocks generally (over the 30-year test period) is the fact that these common stocks, not having been widely acclaimed as growth stocks during the mid-1920's, could be acquired at that time at very attractive vields.

The individual chemical stocks which have consistently shown the highest yield results during the test periods and, moreover, which meet our quantitative yield criteria of growth stocks are DuPont, Dow Chemical, American Cyanamid, Hercules Powder, and to a lesser extent, Union Carbide. Over the 1926-55 period, the other stocks, namely, Eastman Kodak, Olin Mathieson and Allied Chemical, produced average yield results of roughly 7%, which is an unsatisfactory level of performance relative to expected average vield results of alternative high-quality, stable-income stocks. Consequently, these three chemical stocks do not constitute growth stocks as determined by our quantitative criteria. It should be observed that Olin Mathieson produced exceedingly high yield results during the post-war decade, which suggests that the company may have solved the problems that tended to impede its rate of growth in the 30-year test period study.

Briefly considering the chemical stocks as a group, Table

1 shows a composite average yield of roughly 14% annually for the 30-year period. Accordingly, this group of equities has produced a composite yield result at a sufficiently high level to justify its being designated as a "growth industry" although it is clear that a few individual chemical stocks do not deserve the designation of growth stocks in the investment sense. Only in the 1936-45 decade, commencing in depression and terminating at the conclusion of World War II, have the chemical stocks as a group failed to provide favorable composite yield results. The low composite average yield result is obviously a function of the period through which these stocks passed, and indeed, this period constitutes a "test of calamity" for all investment media. The post-war decade provided an environment of unprecedented prosperity for the chemical group. Now it was during this decade that the idea of growth stocks began to crystallize; that is, to attract widespread attention and to become a fixture of investment literature. Thus, despite the very high price-dividend multiples at which growth stocks tended to sell in the post-war decade, Table 1 gives ample evidence that the chemical stocks collectively would have provided better-than-average dividend returns to long-term investors.

2. Capital Gain Results.

The expectation of substantial capital gains is the most popularized feature of growth stocks. This characteristic is definitely borne out by the performance of the chemical stocks examined. Table 2 shows that several of the chemical stocks have produced spectacular capital gain results, and especially is this evident in the cases of DuPont, Dow Chemical, Hercules Powder, American Cyanamid and Union Carbide for the 30-year test period study. DuPont is clearly the most exceptional case of all. Its average percentage growth in capital gains has been in the order of 83% annually, which means that, for the 30-year period, its total market valuation as of December 31, 1955 increased by roughly 2500% over the total investment cost of DuPont stock.

But why, in the case of DuPont and other chemical stocks, has there been such a phenomenal growth in capital gains? Some of the reasons may be isolated from an examination of the long-term past records of these specific issues. First, it seems that the growth of capital values is a reflection of the high rates of compounded growth of earnings and dividends per share. For example, DuPont has exhibited a compounded growth rate of 7% in per share dividends for the 30-year period. Second, there has been a growing awareness by the investing public that the chemical stocks generally represent "growth situations" for which substantial premiums are warranted. This attitude has resulted in higher price-earnings ratios and smaller current yields as the orbit of awareness has widened.

Finally, in the case of many growth stocks, there has been an increasing dividend payout ratio relative to earning power as the period of growth has progressed. Concerning the chemical stocks generally, it seems probable today that the maximum point has almost been reached as to widespread recognition of the growth factor, which accounts largely for the very high price-earnings multiples at which these securities tend to sell in the stock market. Accordingly, the future growth of market values among the chemical group should tend to parallel, and not to exceed, the growth in earning power. As the chemical industry begins to be recognized as "maturing" sometime in the future, then market values will tend to readjust downward to reflect the altered expectations of chemical stocks.

Briefly examining the chemical stocks in the light of the three 10-year periods, an inspection of Table 2 indicates that DuPont and Dow Chemical generally have demonstrated the highest level of sustained growth in capital appreciation. During the post-war decade, some of the chemical stocks produced remarkable market growth, and in every case, the average capital gain results exceeded 10%. The 1936-45 decade, an "acid test" for any common stock, shows the interesting result that each of the eight chemical stocks could at least be liquidated at the end of the test period at market values greater than the original investment cost. As such, these equities seem to have demonstrated good resistant (downside) qualities during this decade of economic adversity.

3. Combined Investment Results.

The methods by which average annual yield and capital gain results are computed in this study make the results amenable to combination. For this purpose, Table 3 has been constructed as a combination of Tables 1 and 2, and presents the combined yield and capital gain results of the chemical stocks for the four test period studies. Again, your attention is addressed to the exceptional results derived in the case of DuPont common stock for the 30-year period. By combining dividend and market results for this period, we observe that DuPont stock has produced average yield and capital gain results in excess of 100% annually. This implies a recovery of total investment cost, paid in the form of investment yield and capital gains, every year for the 30-year test period. Alternately, this implies that the total return exceeds by 30 times the total investment cost of having acquired DuPont stock under the test-period assumptions. Needless to say, the investment performance of DuPont stock is extraordinary, an exceptional case which is here presented as illustrative of the investment characteristics of growth stocks, and is not intended to suggest anything like the level of performance one should anticipate in now acquiring these securities for long-term investment. It is obvious wisdom, when peering into the future, to assume a restrained attitude concerning the probable outcome of permanent investment in growth securities, despite the brilliance of their past records.

Concerning the 10-year test periods, Table 3 reveals other interesting evidence concerning the investment performance of growth stocks. In the 1926-35 period, Olin Mathieson produced the lowest level of investment results among the chemical stocks. But even here, its combined results exceeded an average of 6% for the period. The next 10-year period (1936-45) indicates the lowest level of performance of the chemical stocks when considered collectively. The overall performance in this period approximated 9% for the group as a whole which, in the light of the period covered, must be considered as a favorable level

of results for the chemical stocks generally. Finally, the combined results during the 1946-55 decade are extremely favorable, being in the order of 27% for the group as a whole. During this decade, DuPont produced combined average yield and capital gain results of 44% annually, notwithstanding the fact that, at the beginning of this period, DuPont stock was popularly recognized as a growth situation for which a substantial premium would have been required in purchasing this equity. The purchase yield of DuPont stock as of Dec. 31, 1945 was 2.81% (i.e., the actual yield figure used in this test period study of DuPont), and yet, this stock would have rewarded its investors with very substantial investment results during the post-war decade.

4. Share Multiplication.

Share multiplication as a distinguishing characteristic of growth stocks is clearly in evidence in Table 4 for the eight chemical stocks under review. Share multiplication arises from the corporate process of issuing stock dividends and split-ups, and of making available new shares to stockholders via rights issues. Table 4 summarizes the number of stock dividends, split-ups, and rights issues accruing to our "investor" and the resultant enlargement of shares for the 30-year period. During this period, American Cyanamid and Dow Chemical, and to a lesser extent DuPont, have made available the largest volume of additional shares to stockholders.

Beginning in 1926 with 100 shares of Dow Chemical stock, our "investor" has availed himself of eight rights issues to buy additional common, seven stock dividend payments and two stock split-ups, to multiply his 100 shares into 16,515 shares by the end of 1955. From the investor's standpoint, share multiplication, when combined with rapidly growing earning power, can lead to remarkable results in the accumulation of cash dividends and capital appreciation.

From the standpoint of corporate management, share multiplication has important advantages and intended effects. The issuance of stock dividends and splits enlarges the orbit of share ownership. They reduce earnings and market values per share to psychologically more favorable levels in the stock market. Sometimes they are issued as substitutes for cash dividends, or even on occasions in combination with increased cash dividend payments. The use of rights issues constitutes an advantageous method of financing growth. In fact, this method in combination with heavy plow-back of earnings constitutes the most generally used procedure by which the chemical companies have financed their growth requirements.

5. Compounded Growth Rates.

The compounded growth rates of yield on investment cost, summarized in Table 5, are derived from secular trend analysis of the growing dividend payments relative to investment cost for each of the chemical stocks for the 30-year period and the post-war decade. It is noteworthy that the rates of growth are more rapid in the post-war decade than over the 30-year period owing to the obvious fact that the post-war decade has been a period of unparallelled prosperity for growth stocks as a whole. Table 5 indicates that

the fastest growing chemical stocks have been DuPont, Dow Chemical and American Cyanamid, which have produced outstanding yield and capital gain results in both test periods. Similarly, it seems that Union Carbide, Eastman Kodak and Olin Mathieson have commenced an exceptionally rapid growth phase during the post-war decade.

Allied Chemical clearly indicates the slowest growth rates for both test periods. Yet, this stock presents an anomaly when contrasted with Hercules Powder. For the post-war decade, the stock of Allied Chemical has provided yield results of 5.8% and combined results of 20.2% in association with a compounded growth rate of merely 4%; whereas, the stock of Hercules Powder has provided yield results of 4.7% and combined results of 16.7% in association with a compounded growth rate of 6%. However, this apparent inconsistency is resolved when we consider the initial purchase yields of these stocks at the beginning of the postwar period, namely, 3.2% for Allied Chemical, and 2.2% for Hercules Powder as of Dec. 31, 1945. Because of this substantial differential in purchase yields, it has been possible for Allied Chemical, at a slower growth rate, to produce superior investment results for the decade. This illustrates an important point as to the expected performance of growth stocks. A slow-moving stock purchased at a favorable yield basis is often a "better bargain" for longterm ownership than a fast-growing stock purchased at a very low yield basis. Consequently, although rapid growth is typically a distinguishing feature of growth stocks, it does not guarantee superior investment results to alternatively slow-growth stocks unless associated with a long duration of rapid growth or a reasonable purchase yield basis.

CONCLUSIONS

The leading stocks representing a classic "growth industry" have been explored under four test period studies to provide quantitative information concerning their investment performance as growth stocks. The 30-year test period study of the chemical stocks has been particularly informative as a statistical test of the investment performance of these securities, and for this reason, greater significance is attributed to the results derived from this test period than to the three 10-year test periods.

In this historical context, we observe that the fastest growth rates have been associated with the highest yield and capital gain results. In the light of their investment results, the chemical stocks which meet our quantitative criteria of growth stocks (ranked in the order of best performance) are: DuPont, Dow Chemical, Hercules Powder, American Cyanamid and Union Carbide. The remaining stocks in the study do not meet our growth stock criteria, and in fact, it is doubtful if these stocks have surpassed the results produced by blue-chip income or cyclical stocks over the past three decades.

To be a growth stock, a security must at least grow with sufficient speed to overcome its typically low purchase yield and ultimately to exceed the long-term investment performance obtainable from a stable-income or cyclical stock of equal quality. This means that the stock, if it is designated as a growth stock, must grow substantially faster than 3% compounded annually (i.e., faster than the

growth of GNP) to produce an average annual return in yield and capital gains superior to other types of common stocks held for long-term investment. It is evident that most of the chemical stocks examined in the 30-year test period have produced these superior results. It is evident, also, that the chemical stocks considered as a group justify the designation of "growth industry" because their composite investment results more than meet our quantitative criteria of growth stocks. Consequently, although the chemical group considered as an entity constitutes a growth industry situation, not all of the individual stocks within the chemical group are necessarily growth stocks.

NO 'CRYSTAL BALL' FORECASTS

As to portfolio management, this observation concerning the chemical stocks implies that the composite result of long-term investment in the leading equities of a "growth industry" may adequately compensate for the low investment performance of some of the component stocks. Naturally, even greater results would be obtained if the portfolio manager possesses the rate perception to select only the few "top performers" in each "growth industry". But this is obviously no easy task since a selection procedure is yet unknown or undeveloped for accomplishing this desired objective.

In the absence of a crystal ball, we have deliberately avoided a forecast of which chemical stocks (if any) are likely to prove to be growth stocks in their investment significance in the long-range future. However, it is abundantly evident that the present levels of purchase prices and purchase yields of growth stocks are controlling factors in their future investment performance. Thus, if a reasonable current price is combined with a rapid growth rate (as indicated by the past record), then the investment results can prove to be substantial for long-term holding. If past growth rates are selected for projection, it is perhaps more realistic to employ (or even to reduce) the growth rates developed from the long-term past record (e.g., the past 30-year record) than those developed from merely the past decade's record because the longer period reflects the oscillations of several business cycles. In any event, it is clear that a rapid growth rate, if projected, is not a permanent characteristic of any growth industry or growth stock, and thus, restraint must be exercised as to the selection and estimated duration of the projected growth rate.

Concerning the "growth industry" approach to the selection of common stocks, we may restate the proposition expressed by Mead and Grodinsky: "Beside the industry, equal attention must be accorded to the analysis of the company and its common stock." Industry appraisal is merely one step, and not necessarily the most important step, in the complicated task of finding reasonable investment values in the area of growth securities, and of common stocks generally.

Since the end of World War II, there has been an accelerated trend toward diversification by American corporations. Today most able managements are intensely growthminded, and they are expanding into the more dynamic phases of industrial activity. Consequently, investors as a class may first need to look to these growth-minded man-

agements, and then to the dynamic industries in which they are participating, rather than the reverse process. This conclusion is based on the observation that the really dynamic managements will take full cognizance of growth opportunities. After all, they are better situated perhaps to recognize these opportunities than investors generally.

FOOTNOTES

1. Along theoretical lines, probably the finest effort in growth stock valuation is the "present value" approach employed by John C. Clendenin in the "Theory and Techniques of Growth Stock Valuation," Occasional Paper No. 1. Bureau of Business and Economic Research, University of California, Los Angeles, 1957.

- 2. See "An Approach to Pricing Growth Stocks" by Robert E. Kennedy, Jr., "The Analysts Journal," August, 1957. In this article, a variant of the "present value" approach is suggested as one method of estimating growth stock values.
- 3. The present study originated in the Ph.D. dissertation entitled "The Concept of Growth in the Evaluation of Common Stocks as Illustrated by the Chemical Products Industry," submitted by Robert E. Kennedy, Jr. to the University of Texas, 1957.
- 4. E. S. Mead and Julius Grodinsky, "The Ebb and Flow of Investment Values," D. Appleton-Century Co., New York, 1939, p. 4.
- 5. Statistical information pertaining to the industry was released through the news services by the Manufacturer's Chemical Association during January, 1958.

SOUTHERN NATURAL GAS COMPANY

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Birmingham, Alabama

Common Stock Dividend No. 80

A regular quarterly dividend of 50 cents per share has been declared on the Common Stock of Southern Natural Gas Company, payable March 13, 1959 to stockholders of record at the close of business on March

H. D. McHENRY, Vice President and Secretary. Dated: January 21, 1959. ************************

176TH CONSECUTIVE QUARTERLY DIVIDEND

The Board of Directors of International Business Machines Corporation has today declared a quarterly cash dividend of \$.65 per share, payable March 10, 1959, to stockholders of record at the close of business on February 10, 1959.

> C. V. BOULTON, Treasurer

590 Madison Avenue New York 22, N. Y. January 27, 1959

INTERNATIONAL BUSINESS MACHINES CORPORATION

DIAMOND GARDNER CORPORATION

77/h CONSECUTIVE YEAR OF DIVIDENDS

GROWING FOR THE FUTURE



The Board of Directors of Diamond Gardner Corporation on December 11, 1958, declared a quarterly dividend of 30c per share on the Common Stock. At the same meeting the Board also declared a quarterly dividend of 371/2c per share on the \$1.50 Cumulative Preferred Stock. Both dividends are payable February 2, 1959 to stockholders of record January 5, 1959.

> PERRY S. WOODBURY Secretary and Treasurer

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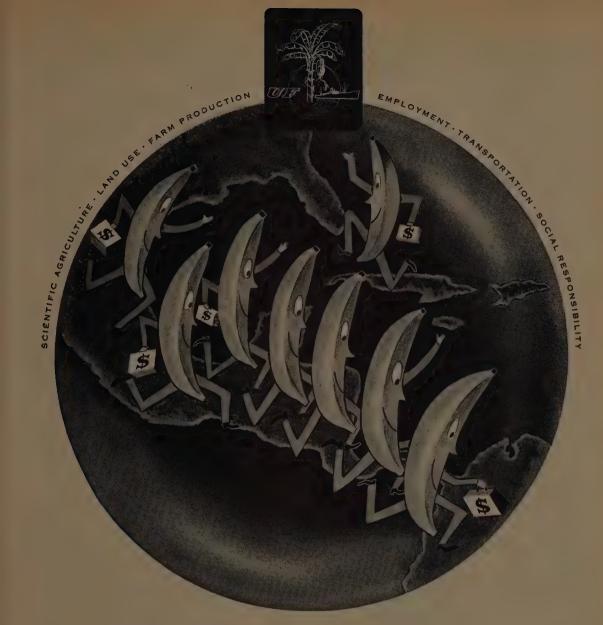
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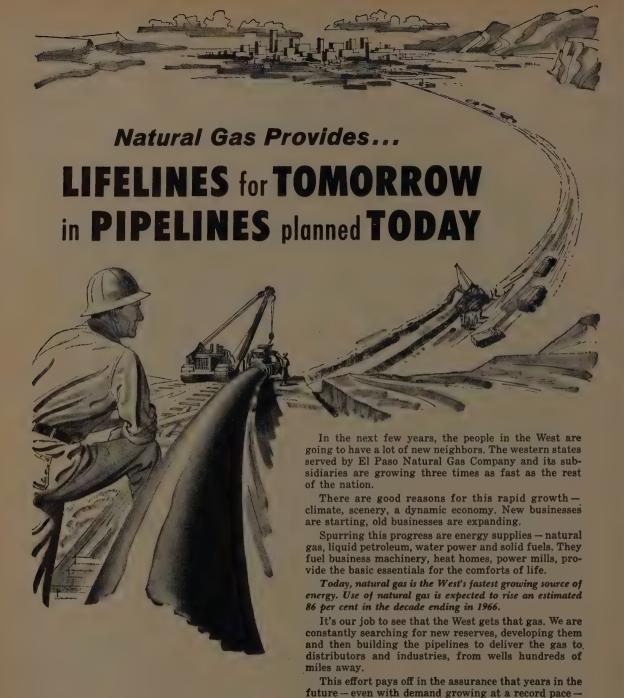
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What About Agency Issues?

by Clyde E. Borman

AN ARTICLE IN THE Illinois Business Review of some months ago, by Robert W. Mayer entitled, "Recent Developments in the Stock Market", stated that it was difficult to reconcile the advance of the market over the previous few months in the light of the period of recession which was being experienced at that time. Mr. Mayer stated: "This manifestation of confidence that the future movements of stock prices will be upward seems to be based, not on interpretation of recognized economic indicators, but on some sort of 'intuitive' feeling." Such "intuitive" feeling, he observed, had oftentimes been substituted for the usual careful analysis of security issues.

One will agree that the "intuitive feeling" concept has been with us for a long time but one would also realize that it has been applied in places other than the stock market. As a matter of fact, subsequent study of the subject leads one to believe that "intuitive feeling" is probably the most prevalent and, in some cases, the only measurement by which so much of the governmental agency market is guided.

One wonders sometimes whether a sincere and thorough analysis is undertaken by investors who buy, or by service departments who recommend investments in some of these agencies. This question becomes more pertinent when an attempt is made to study agency issues. The subject is a long and complicated one. Price Waterhouse and Company in its letter of transmittal to the Commission on Organization of the Executive Branch of the Government, June 30, 1954, admits the size of the chore by stating:

"In the preparation of this report, we have summarized voluminous data available to us to the extent possible consistent with meeting the needs of the members of the commission and the members of the task force on government lending. Our investigation was in the nature of a survey, as distinguished from an audit."

Just how much of the interlocking relationship between the various federal agencies is known by most analysts is a matter of conjecture. The peculiar complexity of the nature of agency lending and guarantee requires considerable study. Textbooks on the subject are difficult to secure. Certain work has been done in the field of agricultural credits; certain additional work has been done in the field of home mortgage credits, but the relationship between the federal agencies, their borrowers and the purchasers of their securities has been seldom explored.

However, it is a fact that all who have analyzed federal

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agencies in the past have not been too impressed with their purpose or functions. The following is a quote from the Commission on Organization of the Executive Branch of the Government, Task Force on Lending Agencies, February 1955:

"Government loans and other forms of financial assistance have been used to help individual people and business enterprises to gain competitive advantages."

The Task Force specifically mentioned the Farmers Home Administration, the Public Housing Administration, and the Farm Credit Administration.

"Losses, (to the United States Government) will be minimized if the risks and incentives of private enterprise system are not dislocated by governmental interference, even interference motivated by good intentions. Primarily on the ground that the further development of our homes, communities, and enterprises will become more solidly founded and secondarily on the ground that the government's administrative machinery will become much less complex, the Task Force feels that the Federal Government should curtail its lending and that it should encourage the direct investment of savings in property ownership and in the equity shares of business enterprises."

The chairman of this body was Paul Grady of Price Waterhouse and Company. There were nine Task Force members and five staff members.

Let us examine for a moment some of the facts which may lead us to take another look at agency offerings before purchasing the securities of any one of them because we believe that those securities are "like governments":

G.C.C.A. REQUIREMENTS

The Government Corporation Control Act requires that all government corporations shall carry most of their cash balances in the treasury. Where capital funds are subscribed, or advanced by the government or its agencies, and then invested in government securities, the interest on these securities amounts to a subsidy by the government. It is an indirect subsidy for the government to provide them with capital and then to pay them interest on their other wise idle funds. Examples of this exist in the following cases: Production Credit Corporation; Federal Housing Administration; Intermediate Credit Banks; Home Loan Banks; Banks for Co-operatives; and Panama Railroad Company.

The same problem was recognized by the Hoover Commission in 1955:

"There are certain agencies in which the Federal Government has investments on which it received either no return or an inadequate return. In some of these agencies the money advanced by the Federal Government has been used to purchase United States securities. Where this situation

exists, the government is in the position of paying interest on the money it borrowed to make the investment in the agency and at the same time paying the agency interest on that part of the government's investment which the agency has used to buy United States securities."

Recommendation (of the Commission):

That the Secretary of the Treasury be required to impose rates of interest on the agencies discussed in this report for Federal advances or contributions equal to the going rate of interest paid by the Treasury on its obligations of comparable maturity.

GOVERNMENT SERVICES

Under existing law, the government furnishes certain services and benefits without cost to several of the agencies, particularly corporations supervised by the Farm Credit Administration and the Agricultural Marketing Revolving Fund. The chief services and benefits furnished consist of funds supplied by the United States Treasury for capital financing (except for the Federal Land Banks) and the government's cost of retirement, disability, and compensation benefits applicable to employees of the corporations.

The cost of these services and benefits, which are not recovered through assessments or otherwise, can be reasonably determined from the agency examinations. For the 1956 fiscal year the cost of the more significant items has been estimated, as seen in Exhibit A.

Exhibit A

Name of Agency	Estimated Cost of Funds Supplied by the Treasury (at 2.576%)	Estimated Share of the Cost of Employees' Retirement Benefits (at 4.92% of Applicable Payroll)
Federal Land Banks	(A)	299,930
Federal Intermediate Credit Banks	1,608,068	65,411
Production Credit Corporations	808,649	44,299
Banks for Co-Operatives	3,864,000	62,171
Federal Farm Mortgage Corp.	(B)	
Agricultural Marketing Revolving Fund Miscellaneous—Applicable to	1,850	
assessable salaries of personnel of Farm Credit Administration		80,240
Total .	6,282,567	552,051

(A) No government capital since 1947.

(B) Nominal capital investment in 1956 (10,000). Source—Report on Audit of Corporations of Farm Credit Administrations for the Fiscal Year ended June 30, 1956.

If the cost of these services and benefits had been paid by the organizations and agencies, the net income would have correspondingly decreased, the net losses of the Production Credit Corporations would have been increased, and the Federal Intermediate Credit Banks would have had net losses instead of net incomes.

OVERSTATEMENT OF INCOME

By the very device of imposing franchise taxes which are substantially below corporate income taxes, government agencies are made in some cases to overstate income. There is no question of the relative unattractiveness of several agency issues if these agencies were required to pay regular corporate income taxes.

Some improvement in retiring debt of some agencies to the U. S. government through the use of patronage refunds is long overdue since payment of franchise taxes produced very little income for the government on its large investment. In 1954, the government had \$62,800,000 in the capital stock of the 12 FICB's and got a return on its investment of \$231,872 or .0037.

Although their securities are distinctly separate, several federal agencies have their individual units located in central offices. As an example, each farm credit district has four major credit units located in a central office: (1) a Federal Land Bank, (2) a Production Credit Corporation, (now a part of FICB), (3) a Bank for Co-operatives, (4) a Federal Intermediate Credit Bank. Activities within each district are coordinated through a Farm Credit Board, members of which are ex-officio directors of each of the district credit institutions. Therefore, although their securities are distinct entities in themselves and bear somewhat varying interest rates, the actual operations of the agencies in each district are coordinated into a single office and administered by overlapping credit board members. The close working inter-relationship of these agencies and their board members is a matter which is difficult to explore.

However, the investor makes little distinction pricewise between these various agencies. Let us examine for a moment a series of selected agency issues as of September 5, 1958 (Exhibit B) and see what price the market place has put on investments in the various federal instrumentalities.

Exhibit B
Selected Issues

Name of Agency (1)	Date of Maturity	Yield Before Taxes—Based on Yield Tables
FICB	10- 1-58	1.56
COOPS	10- 7-58	1.92
FNMA	10-10-58	1.96
FLB	11- 1-58	2.23
FICB	11- 3-58	2.33
FNMA	11-10-58	2.37
FICB	12- 1-58	2.42
FICB	1- 5-59	2.66
FHLB	1-15-59	2.86
FLB	2- 2-59	2.86
FICB -	2- 2-59	2.87
FNMA	2-10-59	2,92
FHLB	2-16-59	3.04
COOPS	3- 2-59	3.14

(1) Source: Aubrey G. Lanston & Co., Inc., Weekly Bulletin, prices as of 9-5-58.

Here is a constantly ascending yield curve as of September 5, 1958 that makes little distinction between the wholly owned and independent Federal Land Banks or the Federal

Exhibit C

AGENCY BALANCE SHEETS(1)

March 31, 1958

(In millions of dollars)

	Banks for Co-operatives	FICB's	Federal Home Loan Banks	FNMA	C.C.C.	Ex-Imp Bank
Assets:						
Cash	15	10	44	55	18	1
Loan Receivable	425	1,040	696	1,641	2,403	3,111
Inventories					2,636	
Investments:						
Public Debt Securities	43	100	1,456			
Other Securities			47			1
Land Structure and Equipment					155	
Other	10	18	9	10	406	26
Total	493	1,168	2,252	1,706	5,618	3,139
Liabilities: (Other than interagency items	;)					
Bonds, notes and debentures payable	224	992	468	1,466		
Other Liabilities	. 3	19	988	46	876	53
Total Liabilities	227	1,011	1,456	1,512	876	53
Capital:						
U. S. Government Interest	223	140		156	4,742	3,086
Privately Owned Interest	42	17	796	38	·	·
	265	157	796	194	4,742	3,086
Total Liabilities & Capital	492(2)	1,168	2,252	1,706	5,618	3,139
Ratio: Capital to Receivables	62%	15%	114%	12%	94%(3)	99%

- (1) Federal Reserve Bulletin, August 1958.
- (2) Does not agree because of rounding.(3) Computed on Loans and inventories.

Home Loan Banks as against the Federal Intermediate Credit Banks and the Banks for Co-operatives which are owned to a great extent by the United States Government. The market does not differentiate appreciably between the attractiveness of these issues, although the Federal Government owned 100% of the capital stock of the Federal Intermediate Credit Banks as of June 30, 1956 and these banks show a net loss from lending operations for the year ending June 30, 1956 of over a million dollars.

The market, further does not observe that the Federal Government owned 100% of the Class A capital stock and 85% of the total capital stock of the Bank for Co-operatives although these banks have been in existence since 1933 and the avowed purpose of Congress at the time they were created was to provide for private ownership as rapidly as possible.

AGENCY DIFFERENCES

There seems to be no relationship between the amount of capital employed by these various agencies and the amount of their loan receivables. (See Exhibit C). This is true whether the capital is provided by the U.S. Government or by privately-owned interests. As an example, the Bank for Co-operatives has over four times as much capital in relation to its receivables as the Federal Intermediate Credit Banks. Yet, both agencies are primarily government owned and, as a matter of fact, the Federal Intermediate Credit Banks serve in some cases as a secondary market for loans originated by the Banks for Co-operatives.

The U.S. Government appears to be overly liberal sometimes with the amount of funds which it invests in various agencies. As an example, the ratio of capital to receivables in the Commodity Credit Corporation and the Export & Import Bank is 94% and 99% respectively. On the other hand, in the case of the Federal Intermediate Credit Banks and the Federal National Mortgage Association, the government appears to be meager in its capital contribution, investing only 15% and 12% respectively. Such a wide variance indicates very little ryhme or reason in the capitalization of these agencies. This variance is also almost impossible to detect in the prices of their securities.

F.I.C.B.'S CAPITAL INCREASED

Effective January 1, 1957, the Production Credit Corporation was merged in the Federal Intermediate Credit Bank in each of the 12 Farm Credit districts, augmenting the capital structure of the FICB's. Additional capital remains available in a revolving fund in the United States Treasury. This was hailed as a move to greatly strengthen the Federal Intermediate Credit Banks.

Here is a record of P.C.C.'s for the period 7-1-53 through 12-31-56:

	1954	1955	1956	7-1-56 through 12-31-56
Income	1,102,199	1,049,767	1,050,023	498,400
Expenses	1,603,971	1,616,738	1,655,561	758,229
Loss	501,772	566,971	604,638	259,829
Loss on sale of Gov- ernment Securities		1,745	87,859	6,014
Net Loss	563,834	568,716	692,497	265,843

Yet of the \$830,218,669 in loans and discounts held by FICB as of 6-30-53, \$737,148,115, or 89%, were originated by Production Credit Associations.

CLASS B STOCK A 'MUST'

Borrowers from the Production Credit Associations are required by law to own, at the time a loan is made, class B stock in an amount equal to \$5 per \$100 or fraction thereof of the amount of the loan (12 U.S.C. 1131 g). Of 498 associations examined by Farm Credit Administration during the 1957 fiscal year, 203 associations had made 814 loans to borrowers who were deficient in class B stock ownership at the time the loan was made. These borrowers were deficient in an aggregate amount of 6,333 shares having a par value of \$5 each.

To the extent to which these deficiencies have occurred, the supervisory responsibilities of the intermediate credit banks subsequent to January 1, 1957, and of the production credit corporations prior to that date were not carried out. Auditors commented on similar class B stock deficiencies in their audit reports for fiscal years 1955 and 1956, and, although Farm Credit Administration officials had given the matter their attention, no apparent progress had been made in the elimination of these deficiencies. The auditors commented:

"We believe that a primary duty of the intermediate credit banks in the performance of their supervisory functions is to require strict compliance with governing laws."

F.H.L.B. STATUS EXAMINED

The Federal Home Loan Bank system is a system in which the Federal government's investment has been repaid and which is now wholly owned by member banks. This is a commendable achievement and one which other agencies are undoubtedly attempting to emulate. Notwithstanding this fact, however, the FHLB takes advantage of its quasi-governmental status to produce earnings which a private corporation might not do, and which go beyond the intent and purpose of this agency.

The FHLB system has obtained considerable additional earnings from investments in almost every year, as it has been advantageous to carry government obligations in its portfolio and finance the major portion of cash needs by sale of debentures. This has been due to the favorable spread in yield on investments, which have a longer average maturity, than on debentures which have seldom run for

more than nine months. In this connection, the tabulation of percent of interest income as compared with percent of interest expense is illustrative. (See Exhibit D).

Exhibit D
Federal Home Loan Bank

Percent of Interest Income as Compared with Percent of Interest Expense

Year End	Average Percent Interest on Debentures	Average Percent Interest on Investments	
1938	1.28%	1.73%	
1939	2.12	1.91	
1940	1.02	1.95	
1941	0.79	1.70	
1942	1.28	1.31	
1943	0.65	1.80	
1944	0.73	1.99	
1945	0.62	2.75	
1946	0.59	1.77	
1947	0.87	2.06	
1948	1.31	1.39	
1949	2.16	2.12	
1950	0.76	2.49	
1951	1.95	1.96	
1952	1.72	2.26	
1953	1.92	2.43	
1954	1.44	1.94	

It is extremely doubtful if such a favorable market could have been enjoyed over the years unless the agency involved could have attracted "intuitive" purchasers, relying on government "guarantee," regardless of the maturities of the respective obligations.

The following quotations express eloquently the role of the Federal National Mortgage Association in the national housing market. A recent bond quotation sheet showed FNMA's of 6-10-65 quoted to yield 3.74% as against a treasury bond of 2-15-65 at 3.38%.

"FNMA serves as a primary market for paper not acceptable to private lenders. In this program, as in other housing loans, no one knows the cost of the government's participation in this lending program. Excessive liberalism in the housing field has contributed . . . to the inflationary spiral."

"In effect, the operations of FNMA have been a form of direct lending of public funds to maintain a par market for FHA insured and VA mortgages. Private investors have found it profitable to turn over their holdings of such loans to FNMA whenever the fixed rate has been less than the comparable return available from other investments. In this way, the borrowers of FHA insured and VA guaranteed mortgages have been subsidised to the extent of the difference."

"... We cannot overlook this inherent danger in large scale government secondary marketing of mortgages... that when the turn in the economic cycle comes, FNMA will be put in the position of foreclosing on a large number of mortgages most of which are for veterans. It is doubtful whether any administration would permit wholesale foreclosures of government-owned veteran debt. Instead, some

form of moratorium probably would be declared. In any event, FNMA could conceivably be left holding a lot of poor quality mortgages on which they would be receiving only a small part of their total interest income."

"Lending institutions sold G.I. paper to FNMA for one of three reasons: First, some were originating mortgages by means of the advance committment solely for sale to FNMA; second, some sold excess loans in order to adjust their loan portfolios and to obtain funds to meet new loan demands; and third, they sold 4% GI mortgages to FNMA because they could reinvest the proceeds at a more attractive rate"*

It is obvious that the Commodity Credit Corporation is primarily not a lender but the instrumentality for carrying out the price support activities of the Department of Agriculture. It accomplishes this purpose through a combination of agreements to purchase the commodity, outright purchases, or conditional purchases under which the seller has the right to reacquire.

In other words, CCC loans amount to direct government purchases from the farmer except and until the market price of a given commodity rises above the "loan," or selling price. In the latter case, the farmer pays off the "loan", so as to be able to sell at the higher market price. In the meantime, of course, he suffers no loss should the market decline.

In no sense are any of these CCC loan programs comparable to loans made by banks, other lending institutions or even other Federal agencies themselves. Moreover, it has been impossible to verify the enormous CCC inventories in

*The Role of the Federal National Mortgage Association in G.I. Home Financing, The Graduate School of Banking, Rutgers University, Byron L. Mortenson, June 1951. commodities, and its methods of accounting have been generally criticized by the Government Accounting Offices.

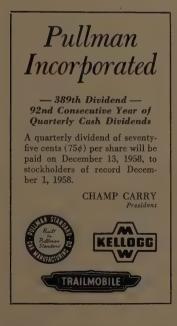
Specific cases of fraud have been uncovered from time to time in CCC operations. In 1952, grain belonging to the government and stored in privately owned warehouses was taken and sold by the warehousemen themselves hoping that they might be able to replace it at a lower price at a later date. Thus, the warehousemen were speculating with commodities entrusted to them to store for the government.

In 1952, in at least 13 cases, the private warehousemen were caught short when they found themselves unable to buy enough grain to replace the government grain they had sold, at the time the government came to collect the stored

Yet, as evidence of investors financial support in this "price support" program, CCC offers to commercial banks at the present time certificates of interest in pooled loans on many agricultural commodities.

USE OF AGENCY DEVICE

There is no question of the right of our government to take steps in promoting its national affairs, furthering its own foreign policy or engaging in any other activity including lending and guaranteeing which is rightly its function. In this event the costs of such a program including excesses of expenses over income rightly belong in the administrative expenses of that government. There is a question, however, in the use of the agency device to further governmental programs when the securities of agencies compete for investors dollars on the basis of an intangible government guarantee, or an obscure capitalization, or function, or purpose or end result. When this occurs, and when the investor fails to realize it, then the market is placing a fictitious value on governmental omnipotence.





Manufacturer of the Broadest Line of Building Products in America

THE FLINTKOTE COMPANY New York 20, N. Y.

quarterly dividends

have been declared as follows:

Common Stock* 60 cents per share

\$4 Cumulative Preferred Stock \$1 per share

\$4.50 Series A Convertible Second Preferred Stock

921/2 cents per share These dividends are payable March 16, 1959 to stockholders of record at the close of business February 19, 1959.

WILLIAM FEICK, JR. Vice-President and Treasurer Fehruary 4, 1959.

*122nd consecutive dividend

Allied Chemical Corporation

DIVIDEND

Quarterly dividend No. 152 of \$.75 per share has been declared on the Common Stock, payable March 10, 1959, to stockholders of record February 13, 1959.

RICHARD F. HANSEN Secretary

January 27, 1959



Continuous Cash Dividends Have Been Paid Since Organization in 1920



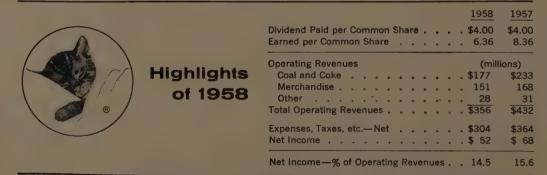
On the first business day of 1959 Chesapeake and Ohio issued a Flash Annual Report covering its year's operations up to midnight of December 31, 1958.

Income-wise, 1958 was the fourth best year in C&O's long history. It was a year in which the regular \$4 dividend was earned with a comfortable margin. It was a year, too, that saw such notable additions to C&O's facilities as the new electronic classification yard at Russell, Ky., and an additional coal pier at Toledo, Ohio, which is the newest and fastest on the Lakes.

Up-to-the-minute reporting of the type that provided

the 1958 figures so quickly is one product of Chesapeake and Ohio's electronic communications and computation systems. It gives C&O a quick picture of what has happened, what is happening, and by translating facts into trends—helps us to see what is going to happen.

Since mid-1958 the general trend has been upward and indications are for a continuation of this trend. We foresee increases in merchandise carloadings, a substantial movement of coal, improved earnings and expansion of facilities that has marked C&O's progress over the years. Chessie's railroad keeps growing and going.



*If you would like a copy of C&O's Flash Annual Report for 1958 and a 1959 Chessie calendar (shown above) in full color, just write:

Chesapeake and Ohio Railway

The Role of Formula Timing Plans in Investment Analysis

by Jay Vawter

THE SUCCESSFUL INVESTOR is constantly trying to maximize his profits by buying his common stocks at low prices and selling them at high prices. While this basic principle applies to all stocks in general, it would seem to have greater application to the growth situation, that is, the stock in which the investor expects his profit to come in the form of long-term capital appreciation rather than as current income. Supposedly this result will come about as the growth company plows its earnings back into the business rather than paying them out as dividends.

However, in such bull markets as we have seen in the last 10 years the market tends to get over enthusiastic about these growth companies and bid the prices up to the point where they can no longer be regarded as genuine growth stocks, the growth of the company having been discounted years into the future. The rapidly increasing interest of institutional investors is applying even more upward pressure on stock prices. This market over-evaluation is not limited to so-called growth companies, but also occurs to lesser degrees in almost all areas of common stock investment, even income stocks. So this "market psychology" that causes over-valuation must be of concern to all stock investors, the degree of concern depending on one's individual investment goals. The investor looking for growth must be vitally concerned with it, while the income investor can, perhaps, be somewhat less troubled.

Realizing, then, that the market will fluctuate and cause varying ratios of prices to true value, we are of necessity faced with the problem of deciding when prices are low and indicate buy action, or high and call for selling of stocks. There is no sure-fire method of predicting these highs and lows in advance or even of knowing when one has arrived. However, many ideas have been advanced as to how we can at least substitute some element of rationale for blind luck. This rationale can usually take one of two general forms, human judgment based on a consideration of facts and opinions as to the future, or the use of formula timing plans which attempt to overcome one of man's greatest investment weaknesses, his emotions, by eliminating it from his investment timing.

Basically, formula timing plans attempt to tell the investor when to increase or decrease his common stock portfolio as the general price levels of stocks fluctuate. In many formulas there will be suggested balances between stocks and bonds dependent on a ratio of stock prices to stock values or a ratio of current stock averages to a pre-set

"normal" price index. For example a formula plan might call for 50% in stocks and 50% in bonds when the stock prices were equal to stock values, a ratio of 100. Then as prices varied from these predetermined values, the balance between stocks and bonds would also vary, as the table indicates.

Ratio of Prices to Values	% Stocks	% Bonds
200	0	100
150	25	75
120	40	60
100	50	50
90	75	25
80	90	10

Other formulas merely indicate buy or sell levels, leaving to the investor the problem of what to do with any cash from a sell action.

Most formula plans do not try to advise the investor on what to buy, but rather only when to buy. Needless to say a formula plan that tries to pick the individual stocks would be taking on a monumental task. This sort of plan will usually be limited to a representative sample of listed stocks, often made up of blue chips and second string "varsity" issues. Some of the larger insurance companies and trust departments of banks may use this type of formula plan for their "approved lists," but such an undertaking would be pretty much out of the question for an individual investor who doesn't have the time or the facilities to maintain such detailed charts and tables as would be necessary. In addition, the individual investor who is interested in taking a greater risk for greater gain might find sufficient information lacking to keep up formula plans on lesser known stocks.

Thus it would seem that the greatest advantage of a formula timing plan is that it usually results in automatic buy or sell action if the investor follows the plan religiously. The mechanical nature of the plans takes some of the burden off the investors shoulders and in the cases where the plan even picks the stocks it may virtually eliminate decision making.

This can be particularly important to institutional investors where the investment department must submit all of its recommendations to an investment committee of the Board of Directors, thus compounding the problem of timing policy. It is also of some value to the uneducated investor who has neither the time nor the ability to make his decisions without an automatic aid. (Of course, even this type of investor has other alternatives, such as investment counseling, and in any case he would not be likely to have his own timing plan).

While formula plans do offer the advantage of automatic

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timing, there are several drawbacks that the investor must consider when deciding between a timing plan or a go-it-alone policy. First, such a plan must be well conceived. Pure guesswork could be superior to a poorly devised formula plan. And even if it appears to be soundly devised, it must be remembered that even the best formula plans, intended to remove human judgment, are themselves dependent on human judgment from their conception. If you doubt this, merely notice that timing plans are based on correlations ranging from sunspots to so-called "gaps" in the Dow-Jones averages. This is not to say that all plans are based on fantasy, but even the best are based on someone's judgment of how a certain set of statistics should be correlated, and then on how the resulting data should be interpreted.

Another drawback of timing plans is their dependence, in most cases, on the assumption that what has happened in the past will also predict a pattern for the future. While it is difficult to avoid some consideration of past happenings in determining future activity, it is certainly questionable to use the past as the only guide to the future, as many timing plans do. This is especially true in a dynamic economy such as ours where changes can almost be measured on a clock rather than a calendar.

QUESTION: HOW TO MAXIMIZE

Further detracting from the value of timing plans is the generally conservative nature of these plans. To fully maximize profits it is desirable to buy at the lowest point in the market and sell at the highest point prior to a downturn, or at least come as close to doing this as possible. Formula plans, however, normally have the investor buying stocks in a market downturn at various price levels above the low point and selling at price levels below the high point during an upturn, certainly a conservative approach. The result is an average buying price above the lowest level and an average selling price below the highest level. Needless to say, it would be practically impossible for anyone using only his own judgment and analysis to hit even one of these levels exactly, let alone both, but an intelligent investor should be able to make out better in the long run than most timing plans. At least he will have a chance of hitting the highs and lows, which is something most timing plans don't have.

Many plans failed to flash buy signals way back when the DJI was at the 300 point, and those who did buy had sold out long before the bull market peak was reached in mid-1956. These same plans showed reasons why not to buy stocks in the slump of late 1957, even when a blue chip such as General Motors was selling at 34 as late as February, 1958.

Unless an individual has a very strong will power he will be subjected to another weakness of formula timing plans, the problem of sticking to them once you start. It is entirely too easy for the investor to second-guess the plan and try to substitute his own judgment for the automatic "judgment" of the formula. It may well be that his own judgment is sound, but if so, he should rely on it primarily and use the formula only as a guide or drop it entirely. Perhaps one of the best uses of timing plans is as general indicators

to be considered along with other factors in reaching investment decisions, but if it is decided to use a formula exclusively, it should be followed religiously or the investor could find himself hopelessly entangled in confusion and indecision.

Perhaps the most important point to be made about these automatic devices is that they are by no means a substitute for selection. They may remove judgment from timing of investments, but not from selecting them (except as previously mentioned). The best timing plan ever devised may tell you when to buy or sell, but it will not tell you what to buy or sell. Even if the formula accurately hits the highs and lows, there is no assurance that the stocks selected by the investor will move in correlation to the formula's movements. As long as we recognize the need of our judgment in selecting individual stocks, it does not seem unreasonable to assume that our judgment might also help us decide when to buy or sell, without relying on a mathematical device. Thus, it would seem that it is indeed quite impossible to eliminate or even substantially reduce the element of human judgment from investment decisions. Timing plans are developed by human judgment and leave selection of stocks to more human judgment.

It would appear, then, that there is no clear-cut case for timing plans as opposed to reliance on pure judgment. On the other hand a blanket condemnation is also unwarranted. There are situations, where these plans serve a valuable purpose. For the small investor who knows little about stocks and markets and who has limited funds, something like a dollar averaging plan is quite desirable when accompanied by competent advice on selection of issues.

OF AID TO THE CONSERVATIVES

Another area in which timing plans may be valuable is institutional investors, such as banks and insurance companies. These investors are necessarily conservative since they are responsible for the personal savings of millions of people. In addition, investment decisions are usually subject to the approval of an investment committee consisting of several directors. Each of these directors is sure to have his own ideas on when to buy or sell stocks and he may not always be in tune with the investment department. However, with a timing plan (dollar averaging is quite popular with institutionals) and an approved list of high grade stocks, a smoothness of investment operations and relations with the directors can easily be established. It is necessary that the formula plan be agreed to and then followed. This would be easier for an institutional investor in its fiduciary position than for the personally motivated individual in-

However, the individual investor. using sound analytical techniques, can probably make out better on his own, using formula plans only as indicators, much the same as he would use the FRB Index of Industrial Production and other such statistical indices. He can concentrate on finding undervalued issues and other stocks that are not running with the tide, whereas under strict formula timing he might miss many good opportunities. Formula timing plans can be very useful investment tools, but like any other statistical aid they must be kept in their proper perspective.

A Breakthrough to Higher Rail Earnings Is in the Making

by Clair M. Roddewig

THERE ARE INDICATIONS that the railroads are on the threshold of substantially higher earnings. The efforts of the railroad industry to remove the roadblocks which heretofore have stood in the way of this industry's full participation in the economic growth and high prosperity of the country have met with initial success. This initial success was the legislation titled The Transportation Act of 1958 (see November 1958 issue of The Analysts Journal), enacted by the last Congress.

In addition, railroad management has been exploring every other avenue that looks promising. Every facet of railroading is being examined. Tremendous changes have been made in the industry's methods of operation so as to improve efficiency. Innovations have been adopted to improve service to the public.

A veritable revolution in railroad service and pricing practices is taking place in an effort to achieve what are probably the principal keys to a higher volume of business—attractive service, attractive prices and good salesmanship.

"Operation Research" would be a descriptive name for the intensive effort of the railroads to find new ways to get the added volume of business, which in turn will produce the increased earnings which are essential to the success of the industry—in fact, essential to the continuation of the industry under private ownership.

The diesel locomotive has replaced the less efficient steam engine, with enormous savings in fuel and maintenance costs. Centralized traffic control, train radio, and other advancements in signaling and communications have greatly improved train operation. Electronic yards have speeded up the movement of freight cars through terminals. Improved higher capacity freight cars have been built, many of them tailored to meet particular needs of shippers. All of this has resulted in a large increase in the capacity of the railroad plant.

"PIGGYBACK" WELL RECEIVED

Piggyback service—the hauling of truck trailers on flatcars—has been enthusiastically received by the shippers, and continues to grow and thrive. This new service, which combines the elasticity and convenience of the truck with the efficiency of the railroad for the cross-country haul, provides an effective way to go after high-rated traffic moving over the highways. The agreed-charge principle of pricing

Clair M. Roddewig, president of The Association of Western Railways, was named to that position while serving as president of the Chicago & Eastern Illinois Railroad. Mr. Roddewig holds a J.D. degree from the John Marshall Law School. During World War II he was general counsel of the Office of Defense Transportation.

railroad service, similar to that already in effect in Canada and Great Britain, is under serious consideration by railroad managements as a means of increasing the railroads' proportion of the total transportation business of the country.

The Soo Line railroad already has proposed some "guaranteed rates" on pipe and tubing under the agreed-charge principle. The Soo Line said it labeled the new rates "guaranteed rates" because it guaranteed to the shipper that no change would be made in the rate for a period of 12 months, unless a minimum rate order of the Interstate Commerce Commission should require an increase, and the railroad was guaranteed that at least 90 percent of the tonnage would move by rail in the 12-month period.

Faster freight train schedules are offered shippers as an inducement to increase their use of railroad transportation. The speedups in running time result from constant examination of schedules and taking advantage of every improvement made in yards, roadway and equipment.

Next, and of great importance, the railroads have set up regional "market research" groups. These organizations, staffed by rate experts, economists, statisticians and cost accountants, are studying freight rates to see how they may be made more effective in encouraging a greater use of rail service.

The researchers are making a study of shipper's requirements and a comprehensive analysis of existing rate structures and movement costs so as to determine what rate adjustments can be made that will bring in more business at a profit for the railroads.

MORE COMPETITION SEEN

The Transportation Act of 1958 gave additional impetus and meaning to the work of the market researchers. The rate provisions of the Act mean that for the first time in several decades the railroads have the right to make rates based on railroad conditions, regardless of the effect on competing forms of transportation.

By working out attractive rate adjustments and better service the railroads hope not only to compete more vigorously with the for-hire motor carriers but also to induce shippers who now use their own fleets of trucks to again utilize the railroads. The latter group of shippers, who operate their own truck fleets, account for an ever-growing percentage of the total inter-city traffic volume.

The railroads have always recognized the opportunity for more business if they were permitted to compete for the freight hauled in shipper-owned vehicles; but up to passage of the new Transport Act they have been unable to offer the private fleet operator the rate adjustments needed to regain his business. Heretofore, the Commission has generally kept many rail rates at unnecessarily high levels

in order to prevent the for-hire motor carriers and bargelines from losing business. Now, the railroad industry hopes to be able to attract to the rails a substantial portion of this business which is not now handled by any common carrier.

However, recent actions by Division 2 of the Interstate Commerce Commission introduce the discouraging possibility that the Commission may ignore the fact that Congress changed the Interstate Commerce Act at the last session and continue to force the railroads to keep certain freight rates high enough to protect their common carrier competitors.

The Eastern railroads proposed some reductions in paint freight rates as a means of regaining business they had lost to the motor carriers. But, the motor carriers promptly protested the rail rate reductions and Division 2 of the Commission suspended the new rates until April 2, 1959.

NEW PAINT RATES CITED

The suspension of these reduced rates is particularly disheartening because they were the first incentive-type rate adjustments to be recommended by the Eastern railroads' Market Research organization.

The proposed new paint rates embody the researchers' recommendations—a reduction of sufficient amount to encourage paint shippers again to patronize the railroads, but still high enough to yield a reasonable profit. The Eastern railroads estimate that the new incentive rates would increase their net earnings by \$1,000,000 or more a year.

In requesting the full Commission to vacate the suspension ordered by Division 2, the railroads emphasized the great importance of this case as a precedent and as a guide line to what can be done under the present law in the competitive pricing of railroad service.

The final decision in this case may well determine whether the responsibility for pricing railroad service is to rest with railroad management in the true tradition of private enterprise, or is to rest with the Interstate Commerce Commission under some sort of a concept that the government knows more about running the railroads than the management elected by the stockholders.

Another recent instance of the difficulties involved in a railroad meeting its competition, is that of the Midwestern railroad which sought to gain business by establishing volume rates on the movement of paper to Chicago from a paper mill under construction in Louisiana.

A Chicago customer of the railroad advised the railroad it would ship 20,000 tons of paper a year from the new plant to Chicago by rail if the railroad would offer a freight rate competitive with the barge rate.

The railroad figured its total cost at \$4.79 a ton and offered the shipper a rate of \$7.42 a ton on single carloads and \$6.72 a ton on multiple carloads. These rates are competitive with the barge rate.

The barge lines protested the new railroad rates as being too low and the Interstate Commerce Commission suspended the rail rates. Subsequently, hearings were held in Chicago by a Commission examiner and a decision is awaited.

The railroad contends it cannot participate in this new business without establishing these rates and hopes that the competitive prices it has offered are not rejected by the Commission in order to clear the way for the barge lines to get all of this new business.

GOVERNMENTAL INTERFERENCE

Still another example of governmental interference with railroad efforts to attract additional traffic volume—and profits—through carefully considered rate adjustments, involves some recently proposed rail rates on the movement of shipper-owned highway trailers carrying general freight and riding on shipper-owned flatcars between Chicago and Portland, Seattle and Tacoma.

The new rates were welcomed by the rail forwarder companies as a means of regaining traffic lost to the motor carriers, but the Interstate Commerce Commission suspended the rates upon protest of the motor carriers.

Subsequent to enactment of the Transportation Act of 1958, public statements of members of the Commission that the new law will make little difference in the Commission's way of doing things, afforded cause for additional discouragement.

However, Rep. Oren Harris, chairman of the House Committee on Interstate and Foreign Commerce and a co-author of the Transportation Act of 1958, recently declared that if the Commission "already does what the Act admonishes it to do, or refrains from doing what the Act proscribes, there obviously would have been no need for a change in the law"

At hearings late last year of the House oversight subcommittee, of which Mr. Harris is also chairman, the Congressman accused some of the Interstate Commerce Commission commissioners of saying in effect with respect to the new Transport Act, "Congress has spoken and said nothing."

"This does nothing," Mr. Harris commented, "to foster that public confidence in their public servant, the Interstate Commerce Commission, without which the Commission cannot hope to succeed in its broad mission."

In a public address in Chicago, Congressman Harris said: "It is a purpose of the Act, and I hope it is understood by all, including the Interstate Commerce Commission and the Supreme Court, that each mode of transportation should have opportunity to make rates reflecting the different inherent advantages each has to offer, so that the public may exercise its choice among them, cost and service both considered, in the light of the kind of transportation desired. At the same time, the Act makes clear, through its reference to the national transportation policy, that such rate making is to be regulated by the Commission to prevent unfair or destructive practices on the part of any carrier or groups of carriers."

EMPHASIS ON IMPROVEMENTS

Since the end of World War II the railroads have been placing great emphasis on building more efficiency and greater capacity into their transportation plant. Some \$14 billion has been spent on these improvements during this post-war period.

Obviously, much of the increased railroad capacity will be meaningless and wasted unless the railroad industry can attract additional business by applying competitive pricing principles which Congressman Harris said the Transportation Act of 1958 was intended to permit.

The rate provisions of the new Transport Act can, if interpreted correctly by the Commission, represent a major break-through to an era of fair and equal treatment by government and a period of substantially higher earnings for the railroad industry.

Railroad representatives know that since their industry thrives on a large volume of traffic, new competitive rate adjustments will produce a snowballing effect. As additional traffic volume is attracted, unit costs go down and more rate adjustments are made possible, resulting in still greater traffic volume and more rate adjustments.

If the "breakthrough" is allowed to develop fully, without any stifling and restrictive interpretations of the new Act by the Interstate Commerce Commission, railroad earnings will show a dramatic increase in the period ahead.

The Interstate Commerce Commission's actions will determine whether the railroads are going to have an opportunity to function under our American system of free enterprise, and in this fashion regain their strength and vitality, or whether the railroads will have to continue to function under the system of political controls which have brought them to their present financial condition, and, if continued, will drive them into government ownership.



INTERNATIONAL HARVESTER COMPANY

The Directors of International Harvester Company have declared quarterly dividend No. 162 of one dollar and seventy-five cents (\$1.75) per share on the preferred stock, payable March 2, 1959, to stockholders of record at the close of business on February 5, 1959.

GERARD J. EGER, Secretary

ALLEGHENY LUDLUM STEEL CORPORATION

PITTSBURGH, PENNA.



At a meeting of the Board of Directors of Allegheny Ludlum Steel Corporation held today, November 20, 1958, a dividend of fifty cents (50c) per share was declared on the Common Stock of the Corporation, payable December 20, 1958, to Common Stockholders of record at the close of business on December 1948

S. A. McCASKEY, JR. Secretary

STANDARD BRANDS

Incorporated

COMMON STUCK DIVIDEND

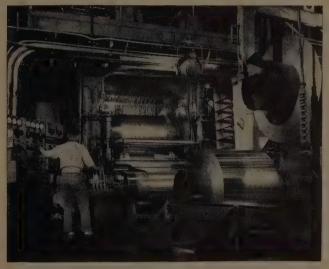
The Board of Directors declared a quarterly dividend of 65c per share payable March 16th to stockholders of record on February 16, 1959.

PREFERRED STOCK DIVIDEND

The Board also declared a dividend of 871/2c per share payable March 16th to stockholders of record on March 2, 1959.

> Joseph H. Hoyt Treasurer

January 22, 1959.



WRAP IT IN MIRRORS. Miles of aluminum foil for everything from heat-'n-eat meals to insulation and car radiators roll from Kaiser's new integrated aluminum plant at Ravenswood, West Virginia. It is one of over 115 aluminum foil mills built by Blaw-Knox,

Record 194,000,000 pounds of aluminum foil rolled in 1958 most of it on Blaw-Knox Mills

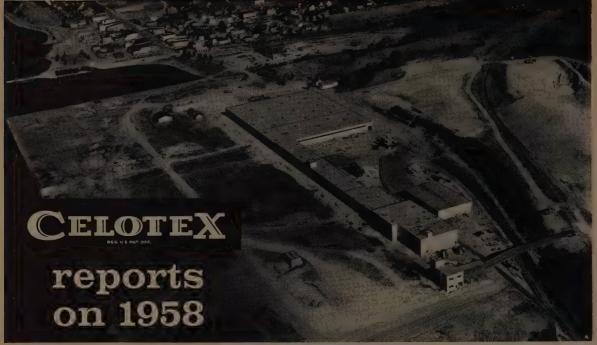
As fast as versatile aluminum foil can be produced, it is gobbled up by supermarkets, food processors, home-builders, defense departments — and a long list of industrial users. The future looks great for foil — and for Blaw-Knox, the world's leading builder of foil mills.

Throughout industry, Blaw-Knox equipment, engineering and research are helping American enterprise build futures. If your company is concerned with rolling or fabricating metals, with road building, chemicals, processing or communications - Blaw-Knox is the forward-looking company you want working with you. Our brochure, "This Is Blaw-Knox," describes our products and services for industry. Write for your copy today.

BLAW-KNOX COMPANY

1234 Blaw-Knox Building • 300 Sixth Avenue

Pittsburgh 22, Pennsylvania



NEW CELOTEX FIBERBOARD PLANT NEARING COMPLETION AT L'ANSE, MICHIGAN ON LAKE SUPERIOR

Net sales were \$67,726,783 and earnings \$3,127,512 in the year ended October 31, 1958, compared with sales of \$68,629,231 and earnings of \$3,883,856 the preceding year. After preferred dividends, the earnings were equal to \$2.79 a share on the 1,028,651 common shares outstanding. The 1957 earnings, which included a \$395,733 net profit on the sale of an investment, were \$3.52 based on the same number of shares.

The general economic recession and a low level of housing starts adversely affected first half results, but in the second half both sales and earnings exceeded those of the last six months a year before. Sales in our last quarter, usually our best because of seasonal factors, exceeded \$20,000,000 with earnings equal to \$1.52 per share. October, the final month, recorded the highest sales of any month in Celotex history.

We are optimistic for 1959. In our opinion, total building activity will exceed that of 1958 and housing starts will compare favorably with those of last year. With our new and larger production facilities we are in a strong position to meet and to share in the additional demand for building materials. While we anticipate that competitive conditions will continue, we expect our sales and earnings to increase.

OS Mausell Herry W. Collens
CHAIRMAN OF THE BOARD PRESIDENT

COMPARATIVE STATEMENT OF INCOME

FOR THE YEARS ENDED OCTOBER 31,

	1958	1957
NET SALES	\$67,726,783	\$68,629,231
COSTS AND EXPENSES:		
Cost of sales and selling and		
administrative expenses	58,832,728	59,206,997
Depreciation and depletion	2,662,365	2,421,379
TOTAL COSTS AND EXPENSES	61,495,093	61,628,376
INCOME FROM OPERATIONS	6,231,690	7,000,855
OTHER INCOME (net)	(114,178)	361,001
INCOME BEFORE INCOME TAXES	6,117,512	7,361,856
Provision for Income Taxes	2,990,000	3,478,000
NET INCOME FOR THE YEAR	\$ 3,127,512	\$ 3,883,856

ASSETS

AS OF OCTOBER 31,

	1958
CURRENT ASSETS:	
Cash and U. S. Government securities	\$11,514,473
Accounts receivable (net)	10,327,867
Inventories	6,729,675
TOTAL CURRENT ASSETS	28,572,015
PROPERTY, PLANT AND EQUIPMENT	73,192,157
Less: Accumulated depreciation and depletion	25,640,898
NET PROPERTY, PLANT AND EQUIPMENT	47,551,259
Investments	1,248,900
PREPAID EXPENSES AND DEFERRED CHARGES	818,955
Total Assets	\$78,191,129

LIABILITIES, CAPITAL STOCK AND SURPLUS

CURRENT LIABILITIES;	
Accounts payable	\$ 3,362,762
Accrued expenses	1,610,251
Taxes (less U. S. Treasury obligations)	727,920
Payments on long-term debt due within one year	950,000
TOTAL CURRENT LIABILITIES	6,650,933
Long-Term Debt Due After One Year	21,400,000
Deferred Federal Income Taxes	930,000
NET WORTH:	
Preferred stock	5,137,250
Common stock	1,028,651
Paid-in surplus	10,581,140
Earned surplus	32,463,155
TOTAL NET WORTH	49,210,196
TOTAL LIABILITIES AND NET WORTH	\$78,191,129

Copies of our Annual Report for the fiscal year ended October 31, 1958, are available upon request. Write to Secretary, The Celotex Corporation, 120 South La Salle Street, Chicago 3, Illinois.

Africa: An 'Open End' Investment

by Curtis V. ter Kuile

LET US THROW A LITTLE LIGHT on a dark continent. Let us study the possibilities of business and investment in Africa and try to prepare ourselves for a participation in one of the very few places in the world where courage, ability and money can be combined and with very little interference—taxation or competition—carve out marvelous opportunities and great wealth over the coming years.

Where in the world could one find such a land, the home of diamonds, the original resting place of uranium, the headquarters for gold, the center of operations in copper, cobalt, radium, ivory, tungsten, aluminum ore, manganese, lead, tin, coal, corn, wheat, tobacco, cotton, coffee, and, as P. T. Barnum said, "a host of other attractions too numerous to mention." It should be emphasized that, despite Cecil J. Rhodes, Kimberly, de Beers, the Union Miniere du Haut Katanga, the Boers, Portuguese, Livingstone, the Belgians, French, British, and all predecessors, there is still opportunity for tremendous earnings by properly, legally, scientifically and energetically developing this fantastic land.

The purpose of this report is briefly to describe certain characteristics of the more likely areas of Africa for investigation, and to point out a few outstanding opportunities for investment.

Once, when man sought to make his fortune, he had any number of places from which to choose. For Europeans, there was always America. For Americans, there was the West, where men such as Clarence McKay and W. A. Clark found wealth. There was Alaska, for men like Tex Rickard; South America, where the Guggenheims built an empire out of copper; there were the South Seas and the Hawaiian Islands, where James Drummond Dole amassed a great fortune in pineapples.

'BY YOUR LEAVE'

But where else save Africa does one have to push curious lions and elephants aside so that you can run a transit line for a new power plant or copper smelter? That is what happened when the Kalembie mine and village was being surveyed. It was the first important commercial enterprise of any sort, except the East African Railway, ever to be established in this country of 93,981 square miles.

It is only proper to point out that African investment means putting money and endeavor into territory dominat-

Curtis V. ter Kuile is a graduate mechanical engineer, Cornell University, and has been engaged in engineering and the investment business for many years. He is a member of the Cornell Engineering Society.

ed by the Belgians, French, British or Arabs, and one will find himself dealing with one or more of these nations, along with the new native governments. Not that there is any particular disadvantage in dealing with these countries, but, nevertheless, it should be noted that most African business is conducted under foreign law.

Africa is a verdant field for business enterprise. The natural resources are fabulous. The governments are stable, with a minimum threat of dictatorships. Foreign capital, engineering and manufacturing experience are welcome, and the tax laws are not severe. The next question is what to do about it. What sort of enterprise or investment to consider, which locality should be prospected. To begin with, the potential investor should not get the idea that he will be first in any of those countries. He should recall the enormous wealth in diamonds, ivory, uranium, palm oil, tobacco, coffee, and cotton that have already been withdrawn from the Dark Continent. He should consult the reports of the Union Miniere du Haut Katanga, the Prospectus of the recent bond issues of the Union of South Africa, the Belgian Congo, the Federation of Rhodesia and Nyasaland, or read a booklet from the World Bank entitled "Loans At Work." He will find photographs of hydro-electric plants of 1,200,000 kw capacity, textile mills, railroads, port installations, modern and sanitary housing facilities and schools for the natives. At least 160 American concerns have invested over \$257 million in Africa. But the surface has only been scratched.

One important question to consider would be "what do they really need?" The answer may be given in part, by referring to what is needed in Texas, for the climate in many parts of Africa resembles that of Texas. One broad market should be for air conditioning equipment, machine tools and road machinery. Also, there should be a demand for deep freezers, screening, athletic goods, insecticides, chewing gum, packaged foods, pots and pans, toilet articles such as tooth paste, drugs and textiles. The advertising

When the Union of South Africa's new stock exchange is completed on Johannesburg's New Hollard Street (the Wall Street of that region), it will be one of the world's most modern. Its estimated cost: \$4,200,000.

Commenting on the need for the edifice, V. H. Simmons, chairman of the South African Stock Exchange, said: "The biggest potential export we have is stocks."

business, especially bill boards, should be almost limitless in scope. For the natives, there would be jewelry, printed and gingham cloth, cosmetics, and dolls—all moderately priced.

There is a great need for various medicines and surgical equipment, particularly for the growing number of hospitals maintained by corporations interested in social improvement for their employees. In the entertainment field, moving picture machines, old films, record players and records, small radios, all useful either for public amusement or private sale to the natives. Even motor scooters and small automobiles might find ready acceptance among the higher paid office and supervisory personnel. Exporters of motor vehicles should realize that automobiles to be used in Africa must have heavy duty springs, specially reinforced bodies, over-sized radiators and six-ply tires, as the going is apt to be very rough and "service stations" far apart.

Of all the various products which may be obtained in Africa, agriculture is among the most important. To begin with, the character of the soil and the climatic conditions in large areas of that Continent are particularly conducive to raising crops of various types. Furthermore, the capital investment required is very much less than in the case of mining. The natives are generally quite expert in the agricultural field. The output of cotton, coffee and tobacco in Africa is rising steadily. Rhodesia produced over 194 million pounds of big leaf tobacco of excellent quality in 1958. Angola (Portuguese West Africa) has available enormous acreage of land ideal for raising coffee and is now producing 1.3 million bags of coffee per year at a cost about onehalf of that in Brazil. French West Africa is growing 2 million bags of coffee per year. It is no wonder that the price of coffee is slowly coming down. Ghana is perhaps the newest nation in the world, yet she is the biggest producer of cocoa.

Almost everyone has heard of the marvelous long-staple cotton for which Egypt has been famous for 100 years. Egypt is now producing 1.9 million bales of cotton per year. Other cotton producers include Tanganyika with 140,000 bales; French Equatorial Africa with 200,000 bales; and Uganda, producing 292,000 bales.

It would not be very difficult for American business men to form corporations to engage in agriculture in Africa. With the new capital would come new opportunities for native employment, and a general uplift in local economic conditions. One may also invest in presently established enterprises which have enormous acreages under cultivation. These include the Cultures au Congo Belge which is mentioned later in this article; Tengaat Sugar Co., Ltd., sugar planters and millers; and Doornkop Sugar and Food Industries, Ltd. The latter owns large sugar plantations, a sugar mill, tobacco and fruit farms, a variety of food-producing concerns, and a license to manufacture and distribute Pascall products in certain African territories.

SOME BONDS ATTRACTIVE

For private investment one finds that the bonds of certain African countries are surprisingly secure and yet sell at attractive yields. Inasmuch as most countries are protectorates or colonies of old line European nations, such as Belgium and France, there exists far more confidence in their intrinsic worth and willingness to pay than in the case of many South American obligations. One need not be too fearful of investing money in Africa. The International Bank for Reconstruction and Development has loaned \$431,591,567 there and is preparing to loan \$40,000,000 more to the Belgian Congo, and \$15,000,000 to Rhodesia.

Union of South Africa 5½% external loan bonds, due Jan. 1, 1968, are selling on the New York Stock Exchange at 98 to yield 6.05%. They are non-redeemable except for the sinking fund. These bonds are rated "A" by Moody. The World Bank has loaned the Union of South Africa \$137,000,000. This is the richest gold and diamond country in the world, and one of the richest in uranium, coal, copper and tin.

The Belgian Congo 51/4% external loan bonds, due April 1, 1973, are selling at 96% to yield 5.60%. This is the only colony of the Kingdom of Belgium, whose own 51/2% bonds, due 1972, are selling at 1051/2 to yield 4.90%. The Belgian Congo is the most rapidly expanding country in Africa in industrial and social fields. It has a vast water power potential, tremendous mineral ore reserves and ranks world first in cobalt, and fifth in copper production. It is famed for industrial diamonds, uranium and radium. The World Bank has loaned the Belgian Congo \$80,000,000.

Federation of Rhodesia and Nyasaland 534% external loan bonds, due May 1, 1973, are selling at 96 to yield 6.15%. The Government has agreed to cause gold to be delivered and sold in the United States if and to the extent necessary to service the bonds. The World Bank has loaned this Federation \$122,000,000 and will shortly loan an additional \$15,000,000. The European money economy of Rhodesia is expanding at a rate as fast as any economy in the world. It is the third largest producer of copper. The Kariba Dam across the Zambesi River is one of the largest power projects in the world, with initial installation of 600,000 kw capacity turbo-electric generators. The second stage of 600,000 kw will be started when demand requires.

ECONOMIC ADVANCES IN RHODESIA

In Rhodesia the African peoples have made significant advances in the sphere of economic opportunity and material prosperity. However, there is still plenty of room for improvement.

Kilembe Copper Cobalt, Ltd., 5½% collateral Trust Debentures due October 1, 1965 are selling at 97 ex-warrants to yield 6.00%. Each \$1,000 Debenture originally had a warrant attached to purchase 150 shares of Common Stock at \$3 per share up to October 1, 1960. The warrants are selling at 65c. The common stock is selling at about \$3.10 per share. The company has a 70% interest in a mine in Uganda, East Africa, having ore reserves estimated at 13,452,000 tons averaging 1.91% copper and 0.16% cobalt. The mine equipment has a capacity of 1,335 tons of ore daily to yield about 8,000 tons of blister copper and 400 tons of cobalt per annum. Control rests with Frobisher Limited of Toronto, Canada.

Union Miniere du Haut Katanga stock is selling at \$70

per share over the counter to yield 6.65%. It is the world's largest uranium producer; it mines 70% of the world supply of cobalt; and it has long been the sole supplier of radium. The company is fully integrated, having its own mines, refineries, chemical plants, hydro-electric power, railroads, roads and cement factories. It maintains carefully planned labor relations, housing projects, hospitals, pension funds, as well as largely producing its own consumer goods, dairy products, cigarettes and beer. It is located far from any political disturbance. Its debt is negligible. The stock is one of the premiere international investments with a broad market on the Brussels and Paris stock exchanges.

Tanganyika Concessions Ltd. stock is about \$7.25 per share over the counter to yield 5.65%. This company owns 1,797,000 sub shares of Union Miniere and 2,700,000 shares of Benguela Railway. Therefore, at the present market for Tanganyika, one can in effect buy an interest in Union Miniere at a discount of about 40%.

There are other choice investment stocks available in top grade companies doing business in Africa. Some of them are quoted in U. S. funds as follows:

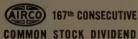
	Div.	Mkt.	Yield
Petroles au Congol	\$2.40	45	5.34%
Ciments du Katanga ²	4.48	75¾	5.92%
Brasserie du Katanga ³	4.80	82	5.85%
Cultures au Congo Belge ⁴	0.67	12	5.58%

- 1. Pipeline from Matadi to Stanley Pool.
- 2. Manufacturer of cement and construction materials.
- 3. Largest brewery in Katanga.
- Cultivation of castor beans, linseed and cotton seed and other oily plants. Also coffee, rubber, cocoa, palm oil. This company has 36,000 acres of plantations.

Conservative portfolios interested in geographic diversification and looking for growth situations may well study carefully the possibilities for African investments. Nations rise and nations decline; some parts of the world seem tired; some economies are stagnant; other areas look bright, full of energy and promise. The latter are the ones to seek out; and Africa appears to be on the way to leading them all.

AIR REDUCTION

Company Incorporated



The Board of Directors has declared a regular quarterly dividend of 62½¢ per share on the Common Stock of the Company, payable on March 5, 1959 to holders of record on February 18, 1959, and the twenty-ninth regular quarterly dividend of \$1.125 per share on the 4.50% Cumulative Preferred Stock, 1951 Series, of the Company, payable on March 5, 1959 to holders of record on February 18, 1959.

January 28, 1959

T. S. O'BRIEN, Secretary



A dividend of fifty cents per share on the capital stock of this Company has been declared payable April 15, 1959, to shareholders of record March 13, 1959.

EDWARD D. TOLAND, Jr.

Secretary and Treasurer
Boston, Mass., February 9, 1959

Dividend No. 58

Interlake Iron Corporation has declared a dividend of 35 cents per share on its common stock payable Dec. 15, 1958, to stockholders of

stock payable Dec. 15, 1958, to stockholders of record at the close of business Dec. 1, 1958.

Vice President & Tress.
Interlake Iron

CORPORATION
CLEVELAND, OHIO
Plants: Beverly, Chicago, Buluth, Erle, Jackson, Tainda



THE DAYTON POWER AND LIGHT COMPANY

DAYTON, OHIO

The Board of Directors has declared a regular quarterly dividend of 60c per share on the Common Stock of the Company, payable on March 2, 1959 to stockholders of record at the close of business on February 16, 1959.

GEORGE SELLERS, Secretary February 6, 1959



BALTIMORE GAS AND ELECTRIC COMPANY

Serving one of America's Great Industrial Centers

QUARTERLY DIVIDENDS

Dividends of \$1.12½ a share on the 4½% Preferred Stock, Series B; \$1.00 a share on the 4% Preferred Stock, Series C; and 45 cents a share on the Common Stock, have been declared for the quarter ending December 31, 1958, all payable January 2, 1959, to holders of record at the close of business on December 15, 1958.

J. THEODORE WOLFE, President

Dividends paid on Common Stock without interruption or reduction since 1910.

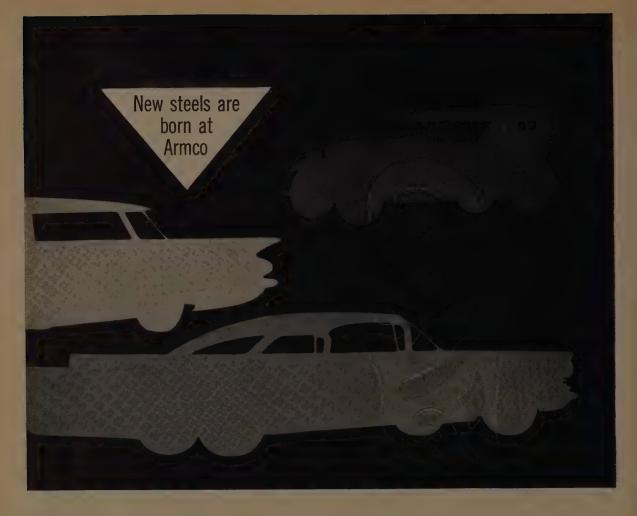
MINNEAPOLIS GAS COMPANY

739 Marquette Avenue Minneapolis 2, Minnesota

Common Stock Dividend

The Board of Directors of Minneapolis Gas Company, at a meeting held on January 8, 1959, declared a dividend of 37 ½ cents per share payable in cash on February 10, 1959, to common stockholders of record as of the close of business January 26, 1959.

G. T. MULLIN, President



How Armco Steel Research helped change the "boxy" look

In the early '30s, auto designers began to get ideas about giving the angular cars of the day a more modern look.

But the steels then available just couldn't be drawn into attractive fenders and panels. They "aged" or became harder and less ductile while in storage, and broke during drawing.

Armco research solved the problem by developing the first deepdrawing "non-aging" steel. It enabled auto designers to change from "boxes on wheels" to sleek modern streamlining.

Now, even better Armco steels go into the tortuous dies that form the sculptured panels and fins of modern cars. These steels, and all others used in auto bodies, are offspring of the "parent" steel born at Armco more than twenty years ago.

Today and tomorrow, in countless

applications—from the colorful curtain walls of skyscrapers clad with porcelain enamel to lustrous stainless steel tableware—it will take more of these new steels for products that capture people's imagination and create great new markets. Many of them will be born at Armco.

Armco is one of the world's leading producers of new steels. Armco Steel Corporation, General Offices, Middletown, Ohio.

ARMCO STEEL



Armco Division • Sheffield Division • The National Supply Company • Armco Drainage & Metal Products, Inc. The Armco International Corporation • Union Wire Rope Corporation • Southwest Steel Products

Branch Bank Stocks Cited as 'Better'

by Joseph Manfrini

IN CONSIDERING THE OVER-ALL PICTURE, it would seem that investments in the capital stocks of branch banking systems are better for the investor, individual and institutional alike, than those in unit banks for more reasons than one.

The spreading of risk through loan diversification in the service area is one basic reason. The broader economic horizon afforded the management of a branch bank in different areas tends to make the top-brass at the head office more understanding of the surrounding financial problems and therefore more perspicacious in their dealings besides giving them a wider field in which to apply their talents as money-lenders.

The unit banker need only satisfy the small clique which controls his bank. If that small group happens to be in the higher income brackets and does not wish any dividends, you, the investor, must not count too heavily on any payouts. Now, the higher-ups in a given branch banking system may well be in the same income bracket but the whims of the stockholders in so far as pay-outs of earnings are concerned are given, if only because of the weight of public opinion, a much greater degree of consideration at disbursement time. This is obviously another reason for giving preference to branch bank stocks over those of unit banks as investments. Then there is a growth potential favoring branch organizations over unit banks arising because of the numerically greater number of opportunities for business expansion with a much more diversified clientele. To follow the ancient Chinese maxim that a picture tells a thousand words, let us illustrate this simple point with the following exhibits. As you peruse these exhibits, keep thinking of such basic statistics as population growth and loan diversification and you will appreciate to a greater degree the investment potential of many branch bank stocks today.

The National Bank of Commerce of Seattle

The National Bank of Commerce of Seattle is a well integrated chain of 57 branches furnishing small towns big city talent and top-flite commercial banking ability throughout the State of Washington (Exhibit A). People in Wenatchee or White Salmon, thanks to this banking set-up, have modern facilities including foreign remittances, escrow, wire transfer of funds, letters of credit, travelers' checks and other services. If you believe that this area will grow, then it is axiomatic that the common stock of the N.B.C. constitutes a good long term equity at this time.

Joseph Manfrini, resident manager of Walston & Co., Inc., in San Luis Obispo, Calif., supplemented his college work with an extensive course in international banking in Switzerland. Later he served as tri-lingual correspondent in the Banca Commerciale Italiana, Milan, Italy for several years. Prior to World War II he owned his own Wall Street firm.

Bank of America N.T. & S.A.

The fabulous Bank of America has over 600 branches in California (Exhibit B). In California financial centers traders refer to this issue as "Bank" and no one ever asks for further specifications. This illustration and the banks earnings record speak for themselves in no uncertain terms. However, let us point out that at its present rate of growth, California will be the nation's most heavily populated state by 1965 beyond the shadow of a doubt. Consequently an investment in "Bank" is an expression of confidence by the stockholder in this concept.

Crocker-Anglo National Bank

One of the fastest growing banks in the California empire today is the Crocker (Exhibit C). Stockholders by now seem to take it for granted that the top management in San Francisco will continue its quiet pressure of the past decade and expand its growing net-work still further in the years ahead.

The Firstamerica Majority-Owned Banking System*

Here is a different structure, a branch banking system (similar in a way to the Midland system in New York State) where the operation is on an interstate basis in effect rather than in fact because of our short-sighted banking laws which prohibit interstate banking. Within this particular system, running in complete harmony as a wheel does with other wheels inside a clock, is the up and coming First Western Bank also with headquarters in San Francisco, only a stone's throw from the main office of the Bank of America. Firstamerica stands to benefit directly from the economic growth in this vast area and the First Western Bank should continue to maintain and possibly even increase its tempo of expansion under the able leadership of its management.

No matter what you care to call them, it must be admitted that several of the finest branch systems in our hybrid banking structure happen to be located within city limits, such as the Manufacturers Trust Co., the Chase Manhattan and the First National City Bank all in New York. Anyone who can successfully estimate in his lifetime when common sense will prevail and allow these superb banks to offer their know-how to all appropriately sized small towns in New York State should be in a position to reap a fortune in these equities. This possibility will come sooner than many unit bankers themselves realize and it will be helped along by our friend inflation, since as the dollar volume of our gigantic interstate enterprises expands over

^{*}Firstamerica is the exclusive name and mark of Firstamerica Corporation, which itself does no banking business. Each Firstamerica bank does business entirely within its own State, its relationship with each other Firstamerica bank resulting from majority ownership of shares in all the banks by Firstamerica Corporation.

Exhibit A - The National Bank of Commerce of Seattle

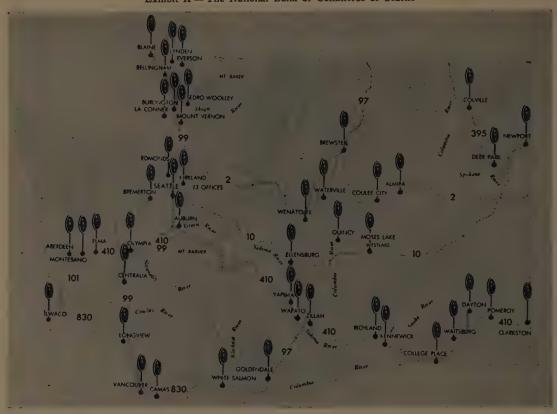
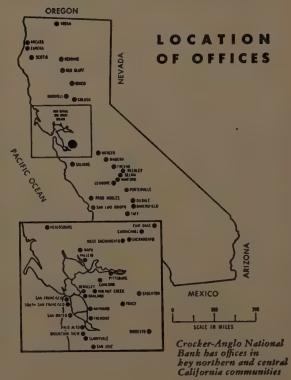


Exhibit B - Bank of America N. T. & S. A.



Exhibit C -- Crocker-Anglo National Bank



the years, many of our commercial banks, with their present inadequate capitalizations, will be forced to merge in order to keep some semblance of pace with our rapidly growing number of multi-million dollar, or billion dollar, industrials. As a matter of fact, logic indicates that there is no sound economic reason why the people in New York, Illinois and Texas should not be permitted to enjoy the benefits in efficiency and public service of branch banking as practiced in California, Washington and Arizona. To deny this premise, is to deny the usefulness of the Federal Reserve System which is, if only constructively, branch banking on an interstate basis as it should be. Anyone who has assisted in an audit of an interstate organization such as Safeway Stores and who has had to deal with dozens of bank statements rather than just one or two will appreciate this remark in its entirety.

The characteristic of bankers towards avoiding publicity has its good points but an exception should be made in so far as the subject of branch banking is concerned. Here is a point they can ask themselves and it relates to a degree of public service, efficiency and operating expenses: How can a unit bank take advantage of technological progress in this machine age to the same degree as any branch banking systems illustrated in this article? It might well be just a non-recurring drain on the earnings of any of the aforementioned chains to install a new man-hour-savings device costing upwards of \$250,000. For the majority of unit

banks this would be economically unfeasible. It is the old story of which grocery has the better chance for economic survival, the one buying carloads or the one buying on a LCL basis.

In summation, it would be appropriate to remind potential buyers of bank stocks that commercial banks earn money on days, nights and holidays. Loans and discounts of course constitute the very life blood of this type of business, the more the proper loans and discounts the more the profits. The population trend in the area served is the key to the future growth of any bank. Last, surely but not least is an intangible factor in banking statistics: the personality of the top individual. In a unit bank his decisions affecting the growth of his institution can be extremely arbitrary and show less interest in public opinion than those of his confrere running a chain of branches. Which attitude is better from the stockholders standpoint? It would seem to be the latter if only because it is easier to figure on moves of a team, sensitive to public interest, than it is to try and anticipate the moves of an individual motivated to a substantial degree by his own personal ambition.

(Editor's Note: An article about Chicago — "the most underbanked major city in the country"—and its currency exchanges, is of interest in connection with Mr. Manfrini's observations. It was published in Business Week, Jan. 31, 1959. Also, apropos is "The Old Gray Bank," Newsweek, Feb. 9, 1959.)

BOSTON EDISON COMPANY

Preferred Dividend

A quarterly dividend of \$1.06 per share has been declared payable on the second day of February 1959 to holders of record at the close of business on January 9, 1959 of the Company's Cumulative Preferred Stock, 4.25 % Series.

Preferred Dividend

A quarterly dividend of \$1.19 per share has been declared payable on the second day of February 1959 to holders of record at the close of business on January 9, 1959 of the Company's Cumulative Preferred Stock, 4.78% Series.

Common Dividend No. 279
A quarterly dividend of 70 cents
per share on the Common Stock
of the Company has been declared, payable on the second
day of February 1959 to stockholders of record at the close of
business on January 9, 1959.

Checks will be mailed from Old Colony Trust Company, Boston.

ALBERT C. McMENIMEN

Boston, December 22, 1958

This announcement is neither an offer to sell nor a solicitation of an offer to buy these securities.

The offer is made only by the Prospectus.

2,900,000 Shares

Universal Oil Processes, Inc.

(Name to be changed to Universal Oil Products Company)

Capital Stock
(Par Value \$1 Per Share)

Price \$25 per Share

Copies of the Prospectus may be obtained in any State only from such of the several Underwriters, including the undersigned, as may lawfully offer the securities in such State.

LEHMAN BROTHERS

SMITH, BARNEY & CO.

MERRILL LYNCH, PIERCE, FENNER & SMITH

February 5, 1959.



MERCER GENERATING STA-TION, shown here in an architect's drawing, will produce 640,000 kilowatts when completed in 1961.



LINDEN GENERATING STATION, which also produces steam for Esso Standard Oil Company, has a capacity of 450,000 kilowatts of electric power.

More and more POWER for New Jerse



BERGEN GENERATING STATION will have a rated capacity of 580,000 kilowatts.

While we do not like to gaze into crystal balls or take on the role of a soothsayer, the future growth of New Jersey is clearly reflected in the actual planning and construction of new electric generating facilities in the territory which we serve. These three generating stations will cost Public Service a total of \$340,900,000 when completed.

By 1962 the installed electric generating capacity of Public Service will exceed four million kilowatts.

Additions and improvements to the company's gas properties are being made continually. We serve more than a million customers with gas, and at present, about one third of them are supplied with natural gas. By the end of 1959, nearly one half of our customers will be served with natural gas.

All of these facts reflect the growth of New Jersey ... and Public Service is growing along with this great state. The years ahead hold great promise. We are planning ahead to fulfill that promise.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

Public Servant of a Great State

PUBLIC UTILITIES

A Real Growth Industry of the 1950's

by Dr. Donald A. Ferguson

DURING THE PAST DECADE, the so-called "growth stock" approach to security selection has become increasingly popular among investors and security analysts. At the same time, there has been some tendency toward loose usage of the term "growth stock."

Two of the earliest advocates of this approach, Mead and Grodinzsky, in their *Ebb and Flow of Investment Values*, published in 1939, considered the choice of the *industry* as the most significant factor in security selection. More recent treatments give more significance to the necessity of locating the growth *company*, with the implication frequently that growth companies may be found even in nongrowth industries.

Certainly, a basic factor in classifying an industry as a growth industry must be the trend in real output of goods or services produced by that industry. This trend is an indication of the changing demand for, and use of, the output of the industry and, in addition, of the volume and efficiency of use of resources being allocated to the industry. From the overall economic point of view, these are the most significant indicators of real growth.

Chart I, derived from Federal Reserve Bulletin figures, presents a comparison of the trend in gas and electric utility output with that of industrial production for the period January, 1950, to October, 1958. It indicates much more rapid growth in kilowatt hours of output by the gas and electric utilities than took place in the real output of industrial firms. Utility output increased by 103% as compared with an increase of 28% in industrial production. Thus, the gas and electric utility industry has a strong claim for consideration as a growth industry during the period of the 1950's. And projections of expected population growth, industrial growth, and the use of electric power strongly suggest a continuation of this growth rate in the foreseeable future. Other evidence can readily be produced to strengthen this claim, such as growth in capacity and its high rate of technological improvement, along with the continuing low price of its output.

For example, steam-generating plants are now much more efficient in the use of coal, so that in 1957 on the average they required only 0.93 pounds of coal to produce 1 k.w. hour of electricity, compared with 1.24 pounds in 1949. (Federal Power Commission and American Iron and Steel Institute.)

With the natural monopoly characteristic of the industry

and the essential nature of the service it provides contributing to stability of growing earnings, and with its resultant justifiably more highly leveraged capital structure and its historically high pay-out ratios, utility common stocks might be expected to behave much more favorably market-wise than industrial common stocks generally. Such a result would seem logical unless some further factor or factors were sufficient to offset the obviously advantageous position of gas and electric utilities. However, Chart II, based upon Standard and Poor's indexes of utility and industrial stock price, indicates that, so far as market prices of common stocks are concerned, the industrials have outperformed the utilities by a wide margin over the same period. Industrial stocks increased in market price by 161% over the period January, 1950, to October, 1958, as compared with an increase of 81% in the market price of utility stocks.

This sharp divergence between common stock market performance and growth in real output suggests the operation of a very powerful deterring factor in the utility industry. The obvious assumption to explain this divergence is that regulation of the industry has prevented the carryover of real growth into the market price of utility stocks. If such is the case, a strong argument can be made for relaxing the severity of the regulation in this industry. The much stronger performance of industrial stocks generally with the much lower overall real growth rate can be advanced to justify more liberal treatment by state and local regulatory agencies. This is particularly pertinent in jurisdictions where the "end result" theory of the Hope Natural Gas case is applied in rate-making. From the investor's point of view, the end result of entrusting funds to the utility industry cannot be regarded as "fair" if it can be demonstrated that much better treatment would result from investing the funds in industrial stocks. Where a "capitalattracting" rate is given consideration in determining a fair return on fair value, the same argument with respect to giving weight to comparative performance holds. Otherwise, expectations of investors may be so influenced that the flow of capital into the utility industry will be diminished below the optimum point. Distortion in the allocation of resources and failure of the industry to provide adequate services to the public may well result.

A recent decision of the regulatory Commission of one of the southern states in a Bell Telephone case suggests that this situation has already arisen.

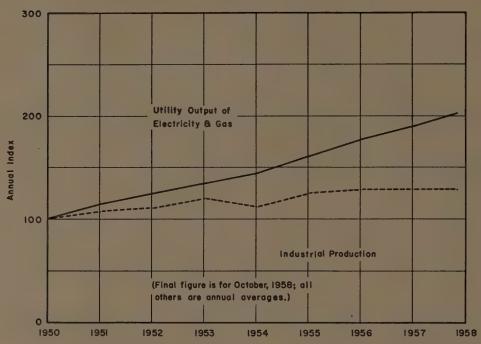
NEED FOR CONSIDERATION

Since the various agencies involved in regulating rates charged by utility companies follow different methods of determining the rate base and an appropriate rate of return on that base, it would seem desirable to investigate the

Dr. Donald A. Ferguson (Ph.D. from the University of Chicago), is professor of finance and the director of Syracuse University's Executive Controls Program, College of Business Administration. He has also taught finance and investment at Harvard, the University of Chicago and the University of California.

Chart I

Comparison of Industrial Production & Utility Output, 1950 = 100



regulatory climate within which a utility operates as part of the process of evaluation of its common stock. Is there any general approach which can be helpful in this evaluation? For example, 29 of the states currently are classified as "cost" states and 19 as "fair value" states in regulating gas and electric utility rates. Is there any indication that market performance of public utility common stocks is significantly affected by the principle followed in determining the rate base? A tabulation of the 30 electric utility stocks included in the Standard & Poor's Index follows, classified by regulatory jurisdiction and percentage increase in market price of common stocks, 1950-58.

on the market performance of a utility company's stock.

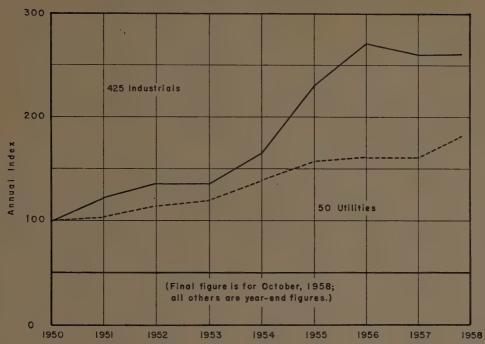
Of course, the rate base alone is not the only factor that needs investigation. In each individual case, the rate of return allowable and any weight given the increase in price levels through other means than the rate base, such as allowances for "attrition" in computing costs or rate of return, must be considered along with the determination of the rate base itself. Very important, too, would be the direction in which the regulatory agency is apparently moving. In this connection, it may be noted that since 1947 by statute or regulatory decision seven states have switched from the "cost" category to "fair value" in rate base determination

Market Appreciation of Common Stocks (%)	50-100	100-150	150-200	200-250	250-300	400-450
"Fair Value" Jurisdictions	5	3	2			1
Original or Prudent Investment Cost Jurisdictions	9	2				1
Mixed Jurisdictions			3	2	2	

This tabulation indicates that the market performance of public utility common stocks of "cost" jurisdictions has not been as favorable as where the "fair value" rule applies. It also suggests that the rate base used may have some effect while 2 others, previously uncommitted, have joined the "fair value" category.

Only one state has switched back from "fair value" to "cost" during the same period. Of course, among the "fair

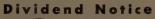
Chart II
Stock Prices Compared: Utilities & Industrials, 1950 = 100



value" states, there are wide differences in the methods of determining value and particularly in the weight accorded reproduction cost. And some of the "fair value" states themselves have tended to increase the weight given production cost. For example, in a recent Iowa Supreme Court decision, the weight given reproduction cost in determining

fair value was raised from 50% to 70%.* This move should have a substantial effect upon the earnings realized in future by the company involved, so long as the rate of return allowed remains unchanged.

*Iowa-Illinois Gas & Electric Co. v. City of Fort Dodge, Sept. 17, 1957.





AMERICAN & FOREIGN POWER COMPANY INC.

100 CHURCH STREET, NEW YORK 7, M. Y.

The Board of Directors of the Company, at a meeting held this day, declared a quarterly dividend of 25 cents per share on the Common Stock for payment March 10, 1959 to shareholders of record at the close of business February 10, 1050

H. W. BALGOOYEN,

Executive Vice President
and Secretary

January 30, 1959.

GOOD YEAR

COMMON DIVIDEND No. 103

The Board of Directors today declared the following dividend:

60 cents per share on the Common Stock, payable March 16, 1959 to stockholders of record at the close of business February 16, 1959.

The Goodyear Tire & Ruhber Co.

By Arden E. Firestone,

Secretary

##
THE GREATEST NAME IN RUBBER

January 12, 1959





Manufacturers of a complete line of automotive and industrial storage batteries.

A REGULAR QUARTERLY DIVIDEND

of 50c per share on Common Stock, was declared by the Board of Directors on January 12, 1959 payable March 16, 1959 to stockholders of record on March 3, 1959.

A. H. DAGGETT PRESIDENT

ST. PAUL - MINNESOTA

Valuation of Common Stocks

(Continued from Page 27)

efforts to blaze new trails, it would be an exaggeration to say that this book met with instant recognition. Few people understood it when it came out. Guild recently found a few hundred copies in an old barn he had not entered for years, and they had to be fumigated for termites.

Guild worked on his book for two years and published it at his own expense, which was quite high as all the calculations had to be done long hand before the advent of modern computing machines. He started thinking about stock values in the winter of 1928-1929. He got out of the market before the crash and is still a successful private investor and trustee. In the September 1956 issue of *The Analysts Journal* he tried to summarize his method. Unfortunately, through some oversight, vital sections of the text were not printed.

John Burr Williams gave the most exhaustive and scholarly treatment of valuation of common stocks by the method of present worth in a doctoral dissertation, *The Theory of Investment Value*, numbering over 600 pages and published in 1938 by Harvard University Press. We shall have occasion to refer again to this distinguished work.

Approaches to Present Worth

This method of appraisal stems from the idea of payout. When all dividends received from a stock have totalled its purchase price, the original investment has been reimbursed.

However, dividends cannot be reinvested until they are collected. They cannot, therefore, have the same worth as dividends payable at present which can be immediately put back to work through the purchase of more stocks, unless they are spent or placed in some other kind of investment. Accordingly, future dividends must be discounted at an appropriate rate in order to calculate their present worth.

It is possible, even natural, to think of the value of common stocks as representing the sum of two benefits accruing to its owner: (1) Income received during the period of holding; (2) Capital gain realized at the time of resale.

If a sufficiently worthwhile financial reward, in terms of the current price, cannot be reaped in due time, we must infer that these future benefits are appraised unrealistically. Under these circumstances if a purchase is considered, it should not be consummated and if the stock is already held, it should be sold. On the contrary, if the present price is low in terms of a reasonably near future fulfillment, the stock meeting such requirements should be held or purchased.

This reasoning governs the construction and use of the tables in S. E. Guild's remarkable book.

Nature of Common Stock Universe

Guild pays the compliment to his readers of treating them as educated and experienced analysts. He leaves to them the choice of discount factors and capitalization multipliers. To fulfill his trust, the user of his tables should remember that he is trying to appraise the value of common stocks.

Stocks have no maturity. They keep moving through time. As long as the company whose stock we are appraising remains afloat on the industrial stream, no terminal point will be in sight for its actual or potential dividend payments. In contrast to bonds, whose future is precisely delineated and finite, stocks dwell in an "open end" world.

In other words, an investor who has mentally cut up the essential unity of a stock into conceptual income and principal segments in order to simplify his thinking must be exceedingly careful how he appraises the resale price.

Even a purely conceptual seller cannot set the price at which his stock should be sold without estimating the probable future prospects at the time of his theoretical resale. They should determine the prospective capitalizer of estimated future earnings. This multiplier must have a direct numerical functional relation to the future rate, or rates, of the estimated growth of dividends and earnings.

The "open-end" nature of the common stock universe is clearly apparent from the chart of Basic Relations. Time constitutes its most important dimension.

However, unlike the physical universe in which we live, the relations we can observe today on the chart are not the effect of immutable natural laws. They are merely a reflection of average past experience. They are subject to change. During short periods, of course, these relations are always in flux. But even the basic secular rates may be undergoing a slow transformation. For instance, because of the new technological revolution, and other structural changes, as well as continuing inflation, the long term rate of growth may have to be revised. But for that we must wait for the accumulation of adequate statistical evidence.

The term "universe", which we use for the sake of graphic description, is applied to a relatively small world. And it is not hermetically sealed. Common stocks do not exhaust all the possibilities of investment. At critical economic junctures, they are threatened by invasions from neighboring investment realms. And even during mere cold wars, they are at all times under competitive pressure from other investment media. Moreover, the problems of individual investors vary widely. Their demands on returns, their other personal investment requirements, their highly individual incidences of planning with relation to time make futile the search for any general rules.

In looking at our chart of Basic Relations we must therefore remember that its message has a limited import. We cannot claim eternal or universal significance for the common measures it offers. We shall apply them only to comparing common stocks among themselves and its our own times. And we shall try to reach this objective by treating each stock as a dividend producing entity moving forward through infinite time instead of dissecting it into separate segments.

Basic Chart and Paper Money

The average historical rates of growth of the three trend lines drawn on the chart of Basic Relations are a composite of actual growth and of a creeping erosion of the monetary unit. By deflating the paper dollar figures by an index of wholesale prices, we find that growth and inflation share about equally in final results.⁶

It is conceivable that some time in the future the present equal mix of the effects of these two factors will change. It is also possible to imagine that both will change ratably to, say, $1\frac{1}{2}\%$ p.a. each, lifting the total overall annual cum-

ulative increment to 3%. But as of now we have still to bear with the historical facts as recorded so far.

The common measures derived from our chart result from data expressed in paper dollars. To reach our objective of being able to set up comparative schedules of stock values, which will rest in part on these common measures, it would be a mistake to adjust our computations for the depreciation of the money. If an investor wishes to adjust his own stock holdings or even his entire assets and income to changes in purchasing power, he may thereby gain a more realistic insight into his true financial welfare. From the same viewpoint, the new quarterly estimates of the Gross National Product now being prepared by the Department of Commerce on a real or constant dollar basis constitute a worthwhile addition to the store of our economic facts. But our own problem is of a different nature.

Our basic reality in this study is reported per share earnings after taxes. For accounting reasons, we should adjust when necessary the reported figures in order to place them all on a sound comparative basis. But by reducing them to constant dollars, the relations between our comparative investment values could be distorted. Changes in purchasing power do not affect the bases for the valuation of stocks, which continue, as always, to be bound to corporate earnings. Inflation might be accompanied by a bear market if it produced conditions unfavorable to corporate earnings; for example, if costs, such as wages, rose faster or further than selling prices, as may easily happen in a controlled economy. During inflation the prices of stocks rise if earnings in depreciated currency are increasing. But there is no logical reason why one should pay higher prices in sound money in order to eventually get a larger sum in depreciated money.

Financial history confirms that earnings continue to govern stock prices in inflationary periods. The classical example is that of the French inflation following World War I up to the Poincare stabilization of the franc. Despite the substantial decline in the value of the currency, as measured by its fall on foreign exchange markets and by the rise in the wholesale price level, the progressive depreciation of the monetary unit was translated into stock prices only as far as it affected corporate earning power. And since companies engaged in different spheres of economic activity benefited or suffered from inflation in varying degree, the prices of their stocks diverged widely.

The situation was similar in England during the postwar inflation until 1920. The inflationary trends did not become evident in stock prices until company earnings had begun to rise.

Earnings lose their influence over stock prices only if and when inflation reaches the stage where the value of money is melting so rapidly that there is a real flight from the currency. If sound foreign currencies are accessible to the public, they are the first and most popular refuge. Any assets that offer more solid value, such as real estate, commodities, and stocks, are other islands of financial salvation from the flood of paper money. When the currency is certain to be worth less tomorrow and probably nothing the day after, stock yields and earnings lose meaning. It's a financial sauve qui peut.

Even in Germany, where inflation raged for five years, earnings remained the chief determinant of stock prices until the run-away stage was reached in the summer of 1922. We do not expect this to happen in this country in any foreseeable future.

Intense fear of inflation in the present economic and financial environment cannot be denied. It stimulates the demand for stocks, even though sometimes the motivating force is more emotional than reasoned. And it has a decisive influence on the unusual relation between stock and bond yields. But it should not affect our common historical measures nor our projections of future rates of growth into which the effects of past and anticipated further inflation are already built. The value of the currency washes itself out in our comparative schedules.

Battle of the Giants

Guild's title dramatizes the two tremendous forces whose unceasing struggle shapes the frontiers of the investment universe of common stocks: Growth and Discount.

When the growth rate is high, it bombards the walls of our limited economic world with almost terrifying violence. Were it not for the countervailing pressure of discount, they would be destroyed as if in an atomic explosion. The discount rate determines the extent to which the present value of growing payments diminishes with the passage of time.

Magic of Growth

According to an ancient legend, failure to understand the hidden power of geometric progression cost a sovereign his kingdom. Once upon a time there lived in India a rich and powerful ruler who was so fascinated by the game of chess invented by one of his subjects, a Brahmin by the name of Sissa, that he offered any reward, however precious. Sissa requested that a single grain of barley be placed on the first square of the chessboard, two on the second, and so on, doubling each time up to the sixty-fourth square—the total number of squares on the board.

"You are not only a great inventor, Sissa," exclaimed the king, "but a modest man as well. You could have asked for half my kingdom; yet you are content with a few grains."

Sissa's shrewdness soon became apparent: the gift exceeded all the king's treasures.

A chess historian has figured that at the rate of production prevailing when he made the computations, two billion square miles would have been required to grow enough barley in one year to pay off Sissa. This is equivalent to the land surface of 38 terrestrial globes. Expressing the value in pounds sterling, a 19th century chess writer arrived at £3,385,966,239,667 and 12 shillings, a tidy sum even at the present rate of exchange. As we do not have to pay the forfeit, we shall not check the calculations.

The income from an investment does not normally double the latter from year to year. In practical investment problems geometric progression appears in the form of compound interest. Still, even at 5%—the historical average current return from common stocks—\$1 would double in 15 years, triple in 23 years, and grow to \$131.50 in 100 years.

If we think of a moderately priced share of stock, say purchased at \$20, bringing in an annual current return of 5%, its yearly dividend will amount to \$1. Should each dividend to be collected during the next 100 years be in turn reinvested at the same 5% rate, such a compounded dividend fund would amount to \$2,610. But if instead of remaining stable, the dividend should grow at 2% p.a., and likewise be reinvested each year, at the end of 100 years the resulting total amount of dividends would be \$12,381.66.

The effect of a modest 2% rate gives a hint of the potentialities of superior rates of growth.

Growth and Value

The first article in the first issue of *The Analysts Journal* which made its debut in January 1945, was devoted to "A Method of Valuing Growth Stocks," by George M. Mackintosh, then with Moody's Investors Service. During the intervening years, analysts have returned many times to attack this difficult problem on the pages of this *Journal* and on those of other financial or business periodicals and investment services.

The question investors are asking is direct and simple: how much can they afford to pay for growth?

The answer is rarely given in definite numbers. At times it does not go far beyond the assertion that growth stocks are an ideal investment. The demonstration triumphantly draws on a vast store of hindsight, bringing up heavy statistical artillery for assaulting a fortress without defendants. By laboriously comparing stocks of outstandingly successful companies with those whose record is mediocre, the wise conclusion is reached that growth is financially preferable to stagnation.

Unfortunately, multipliers applicable to rapidly growing earnings are notoriously high. The investor sits on the sharp horns of a cruel dilemma. Potential rewards are brilliant and abstinence is frustrating. But losses may be huge if capitalizers should shrink. Both undue boldness and unjustified fear can be costly in grasping a serpent or missing a unique treasure.

The case of IBM, the classical example of a growth stock, can illustrate the effects on a stock's earnings of annual increments accumulating at a high rate. For over 40 years IBM earnings have grown an average of about 11% per year. A continuation of such a growth rate for another 50 years would mean annual earnings of over \$2000 per share on the present stock. Continuation for 100 years would lift per share earnings to about \$375,000. Dividend payments would grow proportionately. Actually, for the last 15 years or more, IBM earnings have been growing at an average rate of about 17% per year, which, if continued for 50 or 100 more years, would produce truly astronomical figures.

At the current price-earnings ratio, the market's valuation of one share of IBM's present stock should amount to \$85,000 in 50 years. We shall not try to apply this calculation to its value in 100 years based on per share earnings of \$375,000. But even its more modest theoretical price of \$85,000 a share 50 years hence cannot have this value today. Applying a 7% rate of discount, we come up with a present value of \$2885 a share.

Since IBM is presently selling nearer to 500 than 3000 a share, this shows the reluctance of investors to project high rates of growth too far ahead. Apparently the market is not confident that the earnings of one of the most strongly entrenched and most brilliantly managed companies could continue to grow for about as long they have already been growing at the same average rate. Yet this historical rate is substantially lower than the average rate of the last 15 years and still further below its current actual rate of growth.

This example illustrates also the powerful impact of both the growth rate and the rate of discount. If the latter did not exist as an active force operating in the stock market, and investors were projecting IBM's value in another fifty years as approaching 85,000, there would be no reason why multipliers of current earnings should not reach figures running into many thousand times current earnings instead of the puny 50 or 100 times that invariably give us the jitters. We realize once more that in order to provide investors with capitalizers appropriate for different rates of growth we must develop a standard of value.

The Rate of Discount

The valuation method of present worth immediately confronts us with the all-important function of the discount rate. Each additional one percentage point has a marked effect on value, making value shrink in the direction of a "negative mass" as rapidly as the increasing rates of growth build up its positive momentum. Discount is a powerful economic force whose financial impact can be shattering. An appropriate rate is, therefore, of the highest importance.

The following table shows, in round figures, today's value of one dollar payable 50 years hence and discounted at different representative rates:

		The second secon
3%		23 cents
4%		14 cents
5%		9 cents
6%		5 cents
7%	.,	3 cents
8%		2 cents
9%		1 cent
10%		less than 1 cent

If future dividends are discounted at 7%, as suggested by the chart of Basic Relations, the practical importance of a \$1 dividend will be approaching the vanishing point much sooner than an average human life grinds to a halt at its appointed end. One dollar to be paid in 34 years is now worth a dime; one due in 44 years a nickel; in 50 years three cents (as shown in the above table); and in 68 years only one cent.

Under conditions of the basic chart, i.e., when the annual growth of the trend line of dividends amounts to 2% and a 7% discount rate is used, about 91% of the present worth of future dividends is derived from the first 50 years.

The 7% discount rate is the counterpart of the average historical effective yield of all stocks. Countless stocks have rates of current return, of dividend growth, and of effective yield that do not resemble in the least those of representative overall experience. If we adjusted the discount rate of each individual stock to its rate of growth, the latter would be washed out in computing the stock's present worth,

thereby destroying the most precious and vital ingredient for appraising comparative investment values. To make comparisons possible, the same rate of discount must be used in all cases.

In Thor Hultgren's opinion "what yield an investor should look for as a minimum will depend on many circumstances including his alternative opportunities. These circumstances are not the same for all investors at any one time or the same investor at different times." We agree. However, these are individual problems. We are not trying to answer all the complex individual questions of all investors. Our infinitely more modest purpose is to compare stocks on the same basis. To be able to do so we must express them all in terms of a standard return.

By taking the common yardstick of the historical 7% rate for discounting all future dividend payments, we can determine the relative worth of any stock in terms of the representative experience of all investors. We can thereby place stocks on the same denominator and measure each by any and all the others.

Dimensions of Common Stock Universe

If 7% is our general rate of discount, we cannot project indefinitely rates of growth equal to or in excess of it. Such a combination of discount rate and indefinitely projected growth would produce a present value that is infinitely large. And while it may be pleasant to contemplate the possibility of acquiring, at a reasonable price, a stock worth an unlimited number of dollars, we know how slim the chances are in our, perhaps fortunately, finite world.

As already pointed out, under conditions of the basic chart, a little over 90% of the present value of future dividends are derived the first 50 years. The following figures show the number of years required to produce 90% of the present worth at increasing rates of growth. In all cases the discount rate is 7%, and growth is assumed to continue indefinitely at the indicated constant rate.

Rate of Gr		mber of Years Needed Produce 90% of Value
2%		48 years
3%		61 years
4%		81 years
5%		122 years
6%		245 years
7か	and access	T., C., 14

Just as discounting future payments pulls down their present value, and with increasing effectiveness as the rate of discount mounts, the rate of growth builds value up. The higher the rate of growth, the larger is the chunk of the future it cuts out. Growth and discount wage a constant struggle. When they are equal in strength, the limiting effect of the discount rate serves to make the present value of all the dividends exactly equal. But the accumulation is speeded and would attain a geometric pace if the rate of growth could exceed the rate of discount.

How can we show that a 7% rate is not too low to serve as a general rate for discounting future dividends of all common stocks? Dividends of many stocks enjoy at least temporarily growth rates higher than 7%.

For the sake of illustration, we might set up a case of an

extraordinarily rapid growth of dividends lasting an exceptionally long number of years. We could then examine whether even such an extreme and rare occurrence should lead us to revise or abandon the concept of a general discount rate governing the entire common stock universe or at least to modify its rate.

No one would deny that an assumption of 10% growth for 100 years is highly optimistic. Indeed, we might say, it is beyond the realm of probability. Even such an astounding performance, if followed by the historical 2% growth indefinitely, would be watered down to an average of only 2.7% in 1,100 years—a convenient, though paltry, substitute for infinity.

Regardless of the length of the period, the opulence of the dividend, the rapidity of its growth rate, and, even in the case of their unlikely simultaneous brilliance-all this and heaven too would still not produce an average growth rate of even 3% when the entire growth period is extended indefinitely. An overall 3% rate is an effective ceiling on dividend growth regardless of the initial rate or of the combination of various growth rates during a company's economic life. Few corporations have careers as long as a century. Most reach a peak of earnings and dividends, then gradually revert to the average rate for industry within two or three generations. It is this return to the average, which our historical chart shows to have been 2%, that keeps the overall growth, when projected indefinitely, under 3%. For reasons just stated, it is hard to imagine any individual stock exceeding an overall 3% rate. But a higher growth rate may be characteristic for a stock group, provided it is wide and strong and its members are large and successful corporations. There is then no reason why its average growth rate of dividends and earnings should not be considerably higher than the average rate for all stocks. This could apply, for instance, to such a reservoir of the strongest equities replenishable at will as the Dow-Jones Industrial Average.

Rates of Dividend Payouts

Dividends cannot be estimated before estimating earnings.

One of the most important works on the valuation of common stocks is John Burr Williams' *Theory of Investment Value*. A quotation may be helpful: "a stock is worth the present value of its future dividends, with future dividends dependent on future earnings. Value thus depends on the distribution rate for earnings, which rate is itself determined by the reinvestment needs of the business."

Year-to-year, company-to-company, and industry-to-industry, variations in dividends-to-earnings ratio, i.e., in percentages of earnings paid out as dividends, have fluctuated over an extremely wide range.

Quite obviously, companies with the stablest earnings, for instance, electric utilities operating in regions having reached full economic maturity, show the smallest year-to-year changes in dividends-to-earnings ratios. But all around such islands of *terra firma* swirls the greatest variety of percentages of payouts.

To complicate matters still further, not only does a marked inverse relation exist between rates of earnings

growth and dividend payouts, but this inverse relation is double. The payouts are highest in the troughs of business recessions and may exceed 100% of earnings. Cyclical influences have still another effect on dividends, causing them usually to lag behind earnings. But diversities in viewpoints of directional boards have an influence that can be even more telling.

Let us illustrate by a few examples the wide ranges of percentages of payouts that can exist at the same time in the case of different companies belonging to the same industrial groups. The following have been culled from a list of purchases recommended by a well-known statistical service in early November 1956. The rates of payout apply to estimated 1956 earnings.

	Percentage of Payout
Chrysler	75.0
White Motor	44.4
General Dynamics	59.7
Boeing	18.2
Union Carbide	72.7
Monsanto	50.0
Aluminium Ltd.	43.6
Reynolds Metals	13.8
Standard Oil-N. J.	56.5
Gulf Oil	23.8

This striking diversity in rates of payout is true not only for various individual stocks at the same time but also as the stock, or stock average, moves through time. The accompanying figures are those of the payout of the DJIA since 1929. For good measure, the annual variations in price-earnings ratios are also indicated. To the significance of these ratios we shall revert later.

Dow-Jones Industrial Average

		_
	P/E Ratio	% Payout
1929	15.42	64
1930	21.41	101
1931	33.73	205
1932		
1933	39.55	161
1934	25.04	94
1935	18.95	72
1936	16.03	70
1937	14.42	76
1938	21.98	83
1939	15.55	67
1940	12.35	65
1941	10.45	65
1942	11.64	69
1943	13.85	65
1944	14.22	65
1945	16.08	63
1946	13.99	55
1947	9.44	49
1948	7.82	50
1949	7.61	54
1950	7.08	53
1951	9.67	61
1952	10.94	63
1953	10.14	59
1954	11.74	62
1955	12.32	60
1956	14.74	69
1957	13.18	60
1958 (estimated)	18.00	73

The absence or niggardliness of dividends may be due either to extremely poor business of marginal companies or to earnings growth of blue diamond or other expanding corporations. When growth is slow or the company's business and prospects are almost stable, dividend payouts can be generous. But when growth is rapid, the company's financial policies must be geared to plowing back earnings.

Growth has thus a complex effect on dividend payouts. As long as it prevails, actual dividends too may grow, but at a much slower pace than earnings, as the rate of payouts may even decline. During years of rapid growth, the parallelism of the trend lines of earnings and dividends shown on the basic chart is therefore broken and the two lines may then be forming sharp angles to each other.

In any single year or during some brief period no relation between the earnings growth rate and the payout of dividends may be apparent. Directors will declare whatever dividends they deem wise under the circumstances of the moment. However, their decisions are not due to caprice or sudden inspiration. They are made in response to economic necessities. Their cumulative effect will reflect a relation of payouts to the growth of earnings.

Construction of a Prototype

In terms of the indexes on the chart of Basic Relations, total dividends for the entire period, as compared with total earnings, represent an average payout of about 62.5%. Confronted with the great variety of payout rates that criss-crosses corporate financial life on both the vertical plane of individual differences and the horizontal plane of time, this average figure is not particularly meaningful.

The two parallel trend lines of earnings and dividends on the basic chart stand to each other in a telationship equivalent to a 67% payout. It is neither more nor less significant than any other historical average of dividend payouts that may have been arrived at by some other method. But our interest in the matter does not consist in finding the most suitable statistical measures for averaging out historical payouts. Our purpose is to create, if possible, a standard of comparison for the values of all common stocks.

Most investors know little and care less about the mathematics of finance. When they buy growth stocks, they are not a bit disturbed if small initial and early dividends, which are subject to the smallest discount, pull down present worths.

Investors are more interested in the earnings that can produce dividends than the actual payments themselves. When earnings grow rapidly, high capitalizers are applied regardless of the rate at which dividends are disbursed and frequently even in the absence of any dividend payments.

Finding Normal Dividends

If present worth could be computed directly from earnings, thereby completely sidestepping any need of estimating actual future dividends, much work would be avoided and the margin of error reduced.

Though the trend lines of earnings and dividends run parallel and are interchangeable as a capitalization base on our chart, this long-term historical relation will not necessarily prevail during shorter periods even for indexes of the general market and still less so for individual stocks. We must therefore find norms of relations between earnings and dividends under varying rates of their respective growths.

To discover such norms, exhaustive series of data on trend lines of dividends and earnings were correlated. The more than sixty such pairs of trend lines for the period of our basic chart offered an enormous variety of combinations of positive and negative rates of change of the respective pairs. And since all were based on the broadest available historical indexes of earnings and dividends, the correlation formula did not lose the character of generality essential for our goal-a kit of common measures. This general formula makes it possible to compute a normal theoretical dividend for any rate of growth or decline in a short-term trend line of earnings. The normal dividends can then be discounted by applying the general 7% rate to compute their present value. The valuation formula itself thus indirectly embodies the constant or changing growth rates of the projected trend lines of earnings.

Future trends may be more clearly discerned in some cases than in others. But there will always be a certain point in time, varying for each stock, beyond which even the highest professional skill cannot make reasonably accurate projections of earnings. From this point onward we can extend the historical average rate of growth, 2%, indefinitely. The most representative experience of the past will serve as a scientific expression of our ignorance of the future. The transition from the last projected growth rate to the agnostic 2% rate can be made abrupt or gradual to conform with our judgment concerning each individual case.

Some Points of Technique

The writer is just as allergic to mathematics as undoubtedly most readers are. Fortunately, the formulae needed to compute present worth are simple and, unlike the hamburgers of a certain eating chain, need not boast a "college education."

Our calculations of value are not in any way more complicated than those of any competent investor, regardless of his personal method of studying the merits of stocks. The formulae merely organize more systematically such factual information as happens to be available. In having recourse to them we need not apologize any more than for using a slide-rule. Both are time-saving devices which show progress over the counting machine provided by nature in our fingers and toes.

Because present worth consists of generalized expressions, certain statistical simplifications are necessary for an effective use of its formula. It cannot be applied to factors subject to cyclical fluctuations or other irregular influences. Dividends or earnings, whether normal or actual, must be reduced to trend lines. Besides, to project separately some 50 years individual normal dividends derived from projected growth trends of earnings, then compute each of their present values, would not only be unrealistic but also not very practical.

Of course, individual present values will not be the same

when computed from trend points and individual items. The trend line represents the average of the data themselves and in it the deviations have cancelled themselves out. The final differences in the present values, however, will not be significant. They may be accepted without scruple, especially as the projections themselves are merely estimates. And the longer the period and the larger the number of individual items, the more closely should the two values conform.

Finally, the statistical results of using short-term trends, such as are essential when appraising values from the rapidly changing earnings trends of individual stocks, were tested on our chart of Basic Relations. Instead of its long-term overall trend lines, we took short periods of the fluctuating actual earnings. Into them were fitted numerous short trend lines, all complete with their own particular and widely varying rates of growth. From these short periods theoretical normal dividends were computed and present worths based on them. The normal dividends faithfully outlined the trend lines of actual dividends and the originally computed present worth was confirmed.

Getting the Facts

The possibility of taking normal dividend trend lines instead of actual dividends simplifies some of the technical aspects of valuation. But it does not in itself provide any information concerning the level at which the trend line should be initially anchored nor about the constant rate or multiple rates of growth for projecting the trend line. These vital decisions have little to do with theoretical principles. They must be based on factual information.

Appraisal or valuation cannot be undertaken until all the facts are in and have been completely and exhaustively screened, analyzed, and adjusted by the best professional analysts. Projections of future earnings and dividends should be especially painstaking. They must be the end product of estimates by acknowledged experts made after detailed consultations with the companies' managements in the field. And all such estimates should be within the framework of general economic conditions.

'Attempting to reduce to a practical minimum the factor of unsupported judgment", a leading analyst and investment counselor, Glenelg P. Caterer, vice president of Lionel D. Edie & Company—to use his own words in a recent letter -plans to set forth "a chain of normal relationships, starting with population and going on to share earnings and dividend capitalization rates". "It seems to me," says Caterer, "that a progression such as this is a rational one, whether one is comparing the past with the present or attempting to project ahead. It permits pin-pointing of areas of disagreement, and corrections and improvements to be made in an orderly manner . . . Right now I should think that critical attention should be given to the relationship of earnings to GNP (the profit margin) in view of the larger depreciation reserves, and to the validity of the stock-bond yield comparisons."

When, after following this or a similar route, the analyst is ready to study the earnings of an individual corporation, he will give attention to such matters as the wide qualitative variations in reported earnings due to accounting practices, which can differ both among companies and in the same company over a period of time, as well as the effects of changing intensity of competition upon the level of corporate profits. All such influences can and should be expressed through an adjustment of current and projected earnings on which valuation will be based.

The quality of the earnings also should be checked in their relation to invested capital. They could rise because of higher prices for the company's products. But the company's markets must expand to make the growth of earnings real in terms of increasing substance. An analysis of this type could correct the earnings figures of the appraiser.

These obvious and necessary aspects of security analysis are stressed to make it clear that valuation by the method of present worth, as by any other, in no way represents an attempt to avoid the hard work entailed in any appraisal.

Some analysts apply increasingly higher discount rates to estimated dividends that will become payable out of earnings farthest in the future. This method artificially transfers the widening margin of error accompanying the growing uncertainty of future projections from the earnings themselves, on which the uncertainty bears directly, into an area whose economic nature is altogether different. The risk can be taken care of by widening the range of estimates of future earnings.

Each individual stock will have to be treated on its own merits. To the best of our information and ability, we shall estimate its earnings and dividend trends as far into the future as reasonably can be done.

General yardsticks for effecting comparative measurements are not intended to cancel out the characteristics of the individual stocks whose investment values are being compared. The special traits of each stock will be fully expressed in the trend lines of its own earnings, which may or may not resemble that of any other stock.

Theory and Practice

A theoretical discussion can be made more pointed by practical illustrations.

"The main purpose of security analysis is to enable an investor to make the wisest choice between one stock and another and between stocks and other kinds of investment," as Thor Hultgren of the National Bureau of Economic Research phrased it in a recent letter.

Selection of individual stocks is an important aspect of this broad and general problem of investment. Discussing the technique of appraising common stocks before the Financial Analysts Seminar last summer, G. Howard Conklin, vice president of Dana Investment Co., concluded: "I believe that the greatest value of this type of analysis is in comparing the intrinsic values of a number of stocks. This comparison of intrinsic values of different stocks should prove to be a valuable tool in helping portfolio managers intelligently select attractive stocks on a long term growth basis."

We submit condensed tables of valuation appraisals for six well known industrial manufacturing stocks, selected because their earnings are growing at present at different rates and also show varying combinations of projected future growth rates. The names of the stocks are withheld, yet analysts will have no trouble identifying them by their prices and earnings.

The stocks are anonymous to avoid conveying the impression that they can be fully appraised from simplified skeleton tables, such as given below. The estimates are merely approximations and the results have been rounded out. Considerable additional useful information will be included in our appraisals of each stock when they are published.

An impression of the amount of work needed for painstaking projections may be given by quoting an abridged and adjusted version of a method for estimating future growth trends recommended by George M. Mackintosh in an article mentioned above and published in *The Analysts Journal* exactly 14 years ago. The equity he uses for his demonstration is designated as "Stock D" in our table.

"Intimate knowledge of the subject company, its industry, and of course the forces behind future growth, are vital prerequisites. To estimate the future growth rate of Stock D. for example, each of its five divisions is studied from the angle of product trends into the future. The composite growth rate is then computed by weighting the growth rates of the subdivisions according to their proportionate contributions to earnings. This composite growth rating is then checked with past growth performance of dollar sales, unit sales, operating profit and net income; the excess of plant additions over retirements; ratio of research expenses to sales and to operating income; working capital gains and debt reduction; maintenance of profit margins; ratio of earnings to net worth, and proportion of earnings retained in the business. It is necessary to check periodically on growth in order to determine whether sufficient funds are being kept in the business to permit future growth, and to be sure that retained earnings are being profitably employed."

In a comprehensive appraisal of General Motors, privately circulated in April 1958, the author urged the purchase of this stock at the price prevailing then—35. When the present theoretical study has been finished, he plans to prepare valuation appraisals of other stocks. Meanwhile, the examples below suffice to pin-point the method by showing how the characteristics of each stock are reflected in its intrinsic values.

P/E and V/E Ratios

Our tables show not only the capitalizers applicable to the trend lines of earnings, but also the conventional P/E ratios. The latter are supplemented by ratios of intrinsic value to current earnings, designated V/E.

Comparison of value-to-earnings and price-to-earnings ratios reveals the degree of over or undervaluation of the stock in terms of current earnings. Most importantly, the V/E ratios measure how many times current earnings an investor can pay without acquiring an overvalued stock. Investors impaled on the horns of the dilemma of how much they can afford to pay for a growth stock should heed these ratios as red stop signals. The ratio cautions them: thus far but no farther. However, if investors wish to look beyond today, our tables indicate future values also.

STOCK A 1958 Closing Price: 49 1/2						
<u>1959</u> <u>1960</u> <u>1965</u> <u>1970</u>						
Estimated Level of Earning	s Trend	\$3.25	\$3.38	\$4.08	\$4.45	
Projected Growth of Earning	,	4% —		2%		
Capitalizer applicable to Earnings Trend		14.8	14.8	13.5	13.5	
Intrinsic Value		48	50	55	60	
V/E Ratio = 24	1958 est. E = \$2.0	00 P/E Ratio = 24.8			8	

	STOCK B 1958 Closing Price: 121				
		1959	1960	1965	1970
Estimated Level of Earnings	Trend	\$6.40	\$6.80	\$9.10	\$11.08
Projected Growth of Earnings Trend *			6% —	<u>-</u>	<i>1</i> % −− →
Capitalizer applicable to Earnings Trend		17.5	16.9	14.5	13.5
Intrinsic Value		112	115	132	150
V/E Ratio = 19.5	1958 est. E = \$5.75 P/E Ratio = 21.0			.0	

STOCK C 1958 Closing Price : 96 1/4					
<u>1959</u> <u>1960</u> <u>1965</u> <u>197</u>					
Estimated Level of Earning	s Trend	\$7.25	\$7.80	\$10.40	\$11.50
Projected Growth of Earnings Trend *		-7 1/2%→6%→2%→			
Capitalizer applicable to Earnings Trend		16.6	16.0	13.5	13.5
Intrinsic Value		120	125	140	155
V/E Ratio = 21.8	1958 est. E = \$5.50 P/E Ratio = 17.5		5		

^{*}Average annual rate of growth of earnings trend.

STOCK D 1958 Closing Price: 126 1/8					
		1959	1960	1965	1970
Estimated Level of Earning	s Trend	\$5.50	\$6.10	\$9.60	\$12.25
Projected Growth of Earnings Trend *		-	-11%9	1/2%+ 5	₹
Capitalizer applicable to Earnings Trend		21.3	20.0	15.1	13.5
Intrinsic Value		117	122	1145	165
V/E Ratio = 28.5 1958 est. E = \$4.			P/E Ra	tio = 30.8	

STOCK E 1958 Closing Price: 535						
<u>1959</u> <u>1960</u> <u>1965</u> <u>1970</u>						
Estimated Level of Earn	nings Trend	\$11.15	\$13.05	\$28.60	\$52.70	
Projected Growth of Earnings Trend *				3%→		
Capitalizer applicable to Earnings Trend		47.1	42.9	25.3	17.0	
Intrinsic Value	525	560	725	895		
V/E Ratio = 41.5 1958 est. E = \$12.65 P/E Ratio = 42.3 (incl. foreign and non-recurring)						

STOCK F 1958 Closing Price: 99 7/8					
		<u> 1.959</u>	1960	1965	1970
Estimated Level of Earnings Trend		\$2.80	\$4.20	*10.75	\$12.05
Projected Growth of Earnings Trend *		-	50% →2	! [∦ 2	%
Capitalizer applicable to Earnings Trend		1,0.0	28.1	13.5	13.5
Intrinsic Value		112	118	145	163
V/E Ratio = 58.9 1958 est. E = \$1.9		0	P/E Ra	tio = 52.6	

^{*}Average annual rate of growth of earnings trend.

Intrinsic Values and Earnings Growth

The capitalizer of earnings trend is determined by the current rate of growth combined with all the subsequent projected rates. Needless to say, the period during which each particular rate of growth is expected to continue is also an important factor in calculating the multiplier.

On the chart of Basic Relations, an indefinite extension of a 2% growth rate of dividends and earnings calls for a capitalizer of 20 for the trend line of dividends and for a multiplier of 13.5 for the level of the earnings trend. Higher growth rates will need higher multipliers for their appropriate capitalization.

Since we use the 2% historical rate as an expression of our ignorance of the future, it must take over at some point in the valuation of any stock, even when it is not actually shown in our tables. For instance, in the cases of Stock B and Stock D, the 2% growth rate was projected to begin in 1970.

Stock E presents an interesting case. Its trend of earnings has been growing at the rate of about 17% since the end of World War II. This rate is unlikely to decline sharply. We assume that the historical 2% agnostic rate should not be built into its earnings trend line until 1980. Not until then will its capitalizer decline to the historical average of 13.5. This is the only stock in our six examples where the capitalizer still remains above this figure even in 1970.

Stock F offers another unusual case, but of a different type. Its trend of earnings has been recently growing at the spectacular rate of practically 50% per annum. Yet its 1959 capitalizer is considerably smaller than that of Stock E. However, its present extraordinary growth is due to the invention of a unique product extremely well received by consumers. The anticipated success of another feature that should further enhance its appeal promises to extend the current 50% rate of growth for another few years. Our table drops the growth rate sharply at that point. By then the consuming public is likely to become saturated and, as of now, there seems to be no valid reason to expect an uninterrupted flow of money-making marvels.

Significance of Present Price

Our tables list intrinsic values calculated by projecting earnings. Investors who refuse to accept the idea of making any projections, no matter how short the period and how painstaking the estimates, may perhaps be willing nevertheless to read our tables, so to speak, in reverse.

Thus, in the case of Stock C, the price of 96½ implies an extension of the historical 2% rate beginning immediately in 1959. Since the experts are willing to project its earnings growth at rates in excess of 7% for some years to come, this stock seems definitely underpriced.

For Stock E, on the other hand, current price assumes a continuation of a 17% growth through 1965. followed by a gradual decline to the 2% rate by about 1980. The stock appears to be reasonably priced by the market.

Valuation of DJIA

To facilitate comparisons of individual stocks not only among themselves but also with an index of the general market, we can use the Dow-Jones Industrial Average:

	1959	1960	1965	1970
Estimated Level	# 2E	\$ 26	\$31.50	\$38.50
of Earnings Trend Intrinsic Value	\$ 25 550	\$ 26 575	\$31.50 700	÷ 850

The annual growth rate of the earnings trend is assumed to be constant at 4% and to be extended indefinitely. This makes the capitalizer applicable to the earnings trend a constant multiplier of about 22. All these figures were borrowed from the author's appraisal of DJIA published in The Commercial and Financial Chronicle, October 30, 1958. By referring to it, readers will find several other projections of DJIA earnings and, accordingly, a range of appraisals, some of which may be more in line with their independent judgment.

Comparative Schedules

We can recapitulate all the intrinsic values in individual tables within a single schedule. To make them comparable at a glance, we expressed them in percentages of current prices. Such schedules can be constructed for an unlimited number of stocks.

From these comparative summary tables, a private investor or a manager of investment funds can pick out the stocks most suitable for his purpose and for the time range of his planning.

Schedule of Comparative Values

	40.50	1958 Closin	g Price as %	6 of Intrins	ic Value
	Closing Price	1959	1960	1965	1970
DJIA	583.65	106%	102%	83%	69%
Stock A	49 1/2	103%	99%	90%	83%
Stock B	121	108%	105%	92%	81%
Stock C	96 1/4	80%	77%	69%	62%
Stock D	126 1/8	108%	103%	87%	76%
Stock E	535	102%	96%	74%	60%
Stock F	99 7/8	89%	85%	69%	61%

Investor's Friend

Depending on the requirements of individual investment programs, as many comparative schedules can be set up as are needed. Our sample has only six stocks. But similar schedules may be prepared for an unlimited number of equities. Furthermore, by entering stocks on separate punch cards and running them through a sorting machine, an investor can rearrange the lists in many different combinations and consult several schedules for selecting the stocks most in line with his planning.

To illustrate, he can run off one schedule classified in the order of decreasing cheapness in terms of 1959 values and compare it with a similar classification for some other year, such as 1965. The ingenuity of each investor is the only limit for the manifold uses of comparative schedules. The cards carrying the basic information concerning each stock, which can be as elaborately prepared as desired, can likewise lend themselves to various statistical manipulations.

Many people are in the habit of thinking of the attractiveness of stocks as related to current earnings. Their ideas may be clarified by the use of V/E and P/E ratios such as

are noted on the tables of the six selected stocks. This approach can help them to measure the risk of a commitment not only as it stands today but with an eye to the future. For example, in the case of Stock B, investors would have been paying at the 1958 year-end for the stock's 1962 value. Those who are not preoccupied with price-earnings ratios can of course, more simply, get the same reading by comparing the stock's price with its present and future values or by merely glancing at a comparative schedule.

Nature of Intrinsic Value

Benjamin Graham, the revered founder of scientific security analysis, and one of the few men ever to have reached in his lifetime the status of a legend, recently wrote encouragingly to this author that he was "whole-heartedly in sympathy with your endeavors to value the Dow-Jones average as well as individual stocks. To my mind, the future of Security Analysis as a real discipline must lie in the direction you are taking." However, he added with characteristic detachment: "common stock valuation is largely a matter of interpretation of past relationships plus a choice of various hypotheses relating to the future. These interpretations and choices are bound to reflect subjective personality at least as much as objective fact."

The truth of Graham's remarks about the nature of value cannot be denied. Judgment will always remain the centerpiece of investment. In this study we are trying to present a technique and develop a method—not to dictate the results of our appraisals. If other earnings projections were made than those shown in our six little tables, the intrinsic values would not look the same. One of the reasons for withholding the names of the stocks was that no range of estimates was included in our tables and that no choice was left to the readers.

It should be emphasized nevertheless that once the choice is made—once all the estimates and projections have been completed—there will be one intrinsic value only to fit into the measurements made. There is no flabbiness in the concept nor should there be in the answer it will bring provided the contours of projected earnings fed into the formula are sufficiently firm. There is no reason for them to be vague. The estimates will reflect the competence and modesty of experts. They will be quick to cut off any personal projections as soon as ignorance raises its unwelcome but familiar face and will take refuge on the historical trend line.

Values are based on objective facts such as they are reflected in the subjective vision of trained observers. Evaluation will merely combine them and express them by a single figure. This will reduce to the same comparative basis the different results and varying outlooks of the equities of any enterprises. But nothing more can come out of the appraisals than has been put in. The valuation process will not transmute the original facts into a new and different substance.

Long-Term Aspect of Intrinsic Value

It is especially vital to comprehend completely that our intrinsic value moves along a secular trend line. Otherwise it can become a misleading concept and a dangerous tool.

Investors and analysts often use the term "intrinsic value." But it is rarely strictly defined. In our own studies and appraisals we give to it the meaning with which it is endowed by the chart of Basic Relations. The natural habitat of our intrinsic value is its long-term trend.

If a stock is purchased today at its present intrinsic value and sold at some future time at the intrinsic value of that moment, the return realized will be equivalent to an effective annual yield of 7%. This rate will remain the touchstone of our intrinsic value until such time as the basic relations themselves undergo a statistically ascertainable change.

The Case of DJIA

Study of the Dow average throws much light on the long-term nature of intrinsic value. Along the 4% secular trend line of earnings, the intrinsic value of the Average will grow from year to year. But while it is constantly moving upward in worth and forward in time, its upward pull on prices will inevitably be interrupted by short-term corrections and by cyclical declines which can be quite deep. During these interruptions price may be low when value is high.

In his "Appraisal of the Dow-Jones Industrial Average" (The Commercial and Financial Chronicle, Oct. 30, 1958), the author pinned his projection to an indefinite extension of the Average's long-term trend of earnings at an annual rate of 4%.

Discussing the dimensions of the stock universe in the present paper, the author pointed out that a 3% indefinite dividend growth rate constitutes a practical ceiling for individual stocks. But the DJIA not only consists of the mightiest industrial giants but is also replenishable at will. Its durability is that of the system of free enterprise in this country. It is thereby endowed with indefinite growth which no single enterprise can boast, any more than a man could claim private access to immortality.

In the case of DJIA the long-term 4% rate of earnings trend growth was assumed by us to be constant. This implies that average dividends must have been growing at the same long-term rate. This was actually so for the period 1915-1957, the data we had available when preparing the study.

The author's projection of this rate of growth found support in the computations of DJIA dividends from 1896 to 1914 given him after the publication of his paper by one of the foremost private research organizations (which wishes to remain anonymous because it is not set up for correspondence or discussion). Their average growth, 4.6%, is further evidence that 4% is an acceptable growth rate and valid as a secular measure.

Perhaps the strongest argument in defense of a 4% indefinite growth projection of DJIA's trend of earnings lies in the severity of the recessions it could absorb, as may be seen from a chart, Fig. 3, in the aforementioned issue of *The Chronicle*. If during the next 13 years two deep cyclical contractions took place in earnings, each lasting two to three years with declines ranging from 50% to 60%, the long-term trend line rising at 4% p.a. would be left intact. Yet the numerous structural changes in the economy as well as in governmental policies during the last two decades are likely to make recessions shorter and shallower than they have been in the past. They may well follow the pattern of the last three post-war contractions when the declines in earnings not only did not penetrate their long-term trend line but did not even touch it at their nadir.

If we accept for it an indefinite 4% annual growth rate of the earnings trend, the intrinsic value of the DJIA should reach 700 by 1965 from its present 550 level. But at that time the economy may be going through a recession. Value and price will then most likely be far apart.

Similarly, we may project, as we have done on our comparative schedule, the intrinsic values of individual stocks to 1970. But these appraisals too are made on a long-term basis, while prices are subject to wide cyclical fluctuations and many cross-currents during short periods.

Nature of the Beast

The expression forming the above subtitle was garnered from Benjamin Graham in the course of a conversation. To the author it conveys a warning that if, after setting up our schedules of comparative values, we just rubbed our hands and rested on our laurels, we might yet fall into the devil's trap.

The nature of the beast, it would seem, is that around the lines of the slowly moving long-term trends, cyclical fluctuations—lasting from a year to more than a decade—trace their recurrent patterns, and short, irregular oscillations—lasting from a few hours to several months—occur within each cycle.

At one time many believed that long-term trends alone were of concern to investors; that the rising secular trend of stock prices was an automatic safeguard for their holders. Edgar Lawrence Smith's famous little book, Common Stocks as Long Term Investments, contributed in no small measure to this belief. It translated the remarkable growth in the American economy into a "law of increasing stock values and income return." According to this 'law', "over a period of years, the principal value of a well diversified holding of the common stocks of representative corporations, in essential industries, tends to increase in accordance with the operation of compound interest" and "may be relied upon over a term of years to pay an average income return on such increasing values of something more than the average current rate on commercial paper". (Macmillan, 1924, p. 79.)

There is every reason to be optimistic about the future of this great country and the long-term outlook for American equities. In this respect, Smith's thesis is ours as well. But his optimism is not only unbounded but also unmeasured. In contrast to him, we provide for all stocks definite valuation figures.

Our schedules of comparative values are no new era toys. In the example we gave, only one stock out of six was substantially underpriced at the 1958 year-end in terms of its intrinsic value for 1959. Our schedule presented of course an exceedingly limited sample. Many other stocks may have favorable valuation positions, even though the DJIA itself is now somewhat above its own intrinsic value on the basis

of earnings projections favored by the author. But its overvaluation is recent and still minor. In a bull market it may continue for a long time. Those who believe that the economic background continues to be promising for some time to come need not be disturbed.

The main point we wish to make is that schedules of comparative values, being projections of long-term trends, can be extended into the future. In our illustration they cover an entire decade. Needless to say, we shall continue watching and adjusting our values if changes in earnings projections call for a revision. In the meantime, however, we must be aware that long-term trends, even when retaining full validity, are likely to become interrupted by temporary setbacks. Failure to realize this was quite costly to Smith's followers.

Smith's analysis, which became known as "the common stock theory", received exceptionally wide publicity. It helped to implant the common stock idea in the consciousness of the public. It served to justify to many their purchases of common stocks. And since common stocks were declared to be sound long-term investments, temporary interruptions of their upward trend could be disregarded with impunity. "No doubt the 'common stock theory' gave even to the downright speculator the feeling that his actions were based upon the solid rock of scientific finding."

This blissful dream was disrupted by the cruel awakening of 1929 and the ensuing long depression. The severity of the punishment impressed upon many investors the grave consequences cyclical fluctuations in business can have for the values and prices of common stocks.

After the costly experience of the 1929 collapse investors intensified their efforts to catch cyclical turns. But while all business cycles bear a certain family resemblance, each is a distinct individual in its own right. Each is unique, never repeated.

Security analysts, and investment managers, try to meet this challenge by the use of different tools. One of the important methods tries to find the bases of the market's own valuation of a stock, or of a stock average.

Market Value

To describe this approach in words other than ours, we may quote a recent letter from Andrew Teller whose excellent work has been described earlier in this study:

"The fact is that in many cases the multipliers have not been justified by earnings and dividend growth and, conversely, that superior growth performance often gets no recognition for protracted periods of years. Other groups go through periods of 'revaluation' by investors to reflect fundamental changes in their prospects.

"As a result of the above, the essential question becomes not only at what price should a stock sell (scientifically calculable valuation) but at what price is it likely to sell. The two are not necessarily the same and experience tells us that as a matter of fact they can differ considerably for long periods of time . . .

"The unwillingness of investors to acknowledge superior earnings growth is exemplified by the cigarette industry in the years 1953 through 1957, particularly in the case of Reynolds Tobacco. This was clearly an 'undervalued' stock for five years, but its price performance during this period of a bull market was relatively poor."

How Teller goes personally about this job is summarized in the section on *Methods of Stock Valuation*. But as this is an important subject, it might be well to consider it also in its general aspects.

Normal Price

To find the normal price of a stock, or of an index of the general market, the instinctive first thought and the frequently followed practice is to average out past price-earnings ratios. The intention is to determine the normal multiplier applicable to current earnings for computing the most representative price.

Averaging ratios can be a treacherous occupation. Ratios express the relation between two factors as they exist at the time of the computation. But the numerator and the denominator of a ratio can change without thereby necessarily affecting the ratio itself. And when the ratio does change, it can do so as a result of very different causes, bringing about rises or falls of either of the two factors which compose it, or both. In one of his studies, the author has shown that ten different combinations of changes in the numerator and denominator can bring about a change in the ratio and that three separate combinations may leave it unchanged. And each change can be caused in turn by the interplay of various factors. (Analysts Journal, August, 1955.)

We cannot read the same economic meaning into all identical numerical sizes of a price-to-earnings ratio. The relative magnitudes of the numerator and denominator may often be more significant than the ratio itself. Before it can be used, it should be ascertained whether it is not rooted in arithmetic rather than economics. On many occasions, identical ratios will reveal entirely different economic relations governing stock prices and corporate earnings.

In the section Rates of Dividend Payouts, we list the annual P/E ratios of the DJIA since 1929. Let's average out the P/E ratios for this entire period and for two of its different segments, picked at random:

	Average P/E of DJIA
1929-1936	24.3
1929-1958	15.4
1937-1958	12.6

The range of these average price-earnings ratios is wide. If we apply them to DJIA per share earnings for 1957 and the estimated earnings of 1958, we secure the following choices of DJIA "normal" prices:

1957	877	556	455
1958	665	422	345

We shall leave the choice of the most suitable "capitalizer" to your discretion and its defense to the force of your dialectics. Perhaps you will favor the 15.4 ratio. It stands in middle ground and it applies to the entire period. Our skeptical nature would make us suspect that the result is due to an accidental combination of figures rather than to

the length of the period. In fact, if we improve the method of computing the average and, instead of using the annual ratios, add separately the totals of prices and earnings for 1929-1958, the resulting ratio will drop from 15.4 to 12.9. We believe that averages of price-earnings ratios are meaningless.

Normal Price-Earnings Ratios

During the years before World War I many leading stocks were selling to yield 6% while their dividend payments amounted to 60% of earnings. This temporary condition gave birth to the idea that ten times earnings was a normal capitalization multiplier. Even today, when this relation has long since ceased to be typical, many investors still labor under the impression that ten times earnings is a pretty good rule of thumb for evaluating common stocks.

To quote the April 1956 issue of *The Exchange*, a monthly magazine for investors published by the New York Stock Exchange, "many market analysts use 10 times earnings as a quick method of appraising the reasonable market value of a stock." Since this statement was made less than three years ago, it has not yet gathered enough of the dust of time to disqualify it from being contemporaneous.

But to relate a stock's price to its earnings of a single year—the common practice in computing price-earnings ratios—is not a very satisfactory guide to value. The Exchange compared P/E ratios for forty companies and found that they ranged from approximately 8.5 for Bethlehem Steel and Republic Steel, whose earnings had made new records, to 137.5 for Avco Mfg., whose earnings were lower than in the preceding year.

Variety, not uniformity of price-earnings ratios, is usual. As Graham and Dodd point out (Security Analysis, 3d ed., p. 204):

"When the student compiles a large assortment of priceearnings ratios, he is likely to be bewildered by their diversity and inconsistency. Since many stocks cover a wide price range within a single year, this would mean that their ratios will vary correspondingly in that year. The average annual ratio for nearly every stock is likely to be very different in one year than another. Finally the ratio of different stocks when observed at the same moment could readily range from as low as five times to as high as twentyfive times current earnings."

In thinking about this and trying to analyze the amazing range of price-earnings ratios, it begins to dawn upon us that there exist two different types or variants of changes in the ratios.

First Variant of Changes in P/E Ratios

Most of the elementary textbooks on economic statistics discuss—often in considerable detail—the necessity and techniques of eliminating secular trend, seasonal variations, and cyclical fluctuations. Comparisons of unadjusted statistical series make little sense.

Wall Street is keenly aware of seasonal differences and adjusts for them in such data as carloadings and construction contracts. But when it comes to cyclical changes in the level and direction of the prices and earnings of stocks, investors often ignore them in computing price-earnings ratios.

In the turning areas of business cycles, changes in priceearnings ratios are likely to be the result of a time lag in the movements of stock prices and earnings. While both factors are among the economic series most sensitive to cyclical influences and vary widely during expansions and contractions, prices tend to lead earnings. Their respective peaks and troughs may be reached months or years apart.

This was what happened in 1958 and confused many investors. The unusually high price-earnings ratios were only in part capitalization multipliers. They had a substantial superstructure which was the cyclical reflection of the numerator and denominator temporarily moving in opposite directions.

Even during the middle phase of an expansion or contraction, when earnings and prices move in the same direction, their relative rates of advance or decline often differ markedly because of the cyclical time lag, or other reasons, causing changes in price-earnings ratios. Such shifts can be baffling to those who would like always to interpret the ratios as deliberately applied capitalizers.

Averaging price-earnings ratios reflecting from period to period, and often from year to year, entirely different economic conditions, as we were just trying to do for the DJIA, is highly recommended for impressing and befuddling inexperienced readers or listeners. Its usefulness for serious research is questionable.

Second Variant of Changes in P/E Ratios

This type occurs when the ratios of individual stocks, to use a phrase from the Graham-Dodd quotation, are "observed at the same moment". They range widely because even though the ratios are computed from present earnings, they indirectly reflect estimates of probable future earnings as well. Built into a high price-earnings ratio is the judgment of investors that current profits are low compared with the stock's projected future earning power.

This type of variation in the ratios is directly concerned with valuation problems. It attempts to transcribe the differences in the growth rates of projected future earnings into differences in the respective levels of the multipliers.

Through constant observation and comparison, analysts evolve multipliers that are suitable for certain types of stocks. The higher the rate of growth of the earnings of a given equity or of the industrial group to which it belongs, and the longer this growth can prevail, the higher will be the multiplier which will be assigned to them by the market. But it would be a destructive procedure, in trying to find a normal capitalizer, to average out these different multipliers. This would wash out their most valuable individual characteristics—the rates of growth of the earnings.

To sum up, multipliers applied to earnings of a single year, or some other short period, are inadequate for valuation. In the case of growth stocks they are high because future earnings and dividends are expected to be much higher than they are now. In itself this should be sufficient to show that current earnings are pretty irrelevant as a

capitalization base. If we have a yen to average something, we might apply ourselves to earnings.

Earning Power

Statistics refute those who still cling to the belief that a significant relation exists between changes in stock prices or stock values and current earnings.⁸ Analysts familiar with this research, or having sufficient personal experience, work with average earnings. Elimination of cyclical influences leaves a stable and solid earning power.

There are different ways to obtain this result. The simplest consists in using some moving average of earnings. This method is rather rudimentary and more suitable for illustration of the principles than for actual appraisal. Alarmed at the thought that he might succumb to this temptation, Walter S. Morris, a research partner of Model, Roland & Stone, and Joseph Mindell, economist partner of Marcus & Co., recently wrote to the author to forewarn him about the danger. They each pointed out that in eliminating the earliest year of a moving average when the most recent is added to the chain, the mechanical accident of the sizes of their respective figures might distort the results. These warnings bore evidence of the meticulous care of the experts' planning in attacking any of their problems.

The idea of earning power, i.e. of average, representative or normal earnings is theoretically simple. However, the author believes that its level which effectively serves as a basis for determining market value or normal price cannot be found by formula or definition. It is a work-out. Countless investors and speculators operate in the stock market. Their ideas and information about present and projected earnings vary from the sublime to the ridiculous. Only as an outcome of a ceaseless tug of war, sanctioned by profit as reward for good judgment and by financial loss as retribution for ignorance or ineptitude, there emerges a level of earning power that has operational significance for valuation. To find it is not easy. Sometimes a moving average may offer a good beginning for the investigation. But it is unlikely to succeed by itself and should be supplemented by other methods.

The curve of normal dividends is frequently of great assistance in the search for a statistical expression of earning power. This approach can establish the level of normal earnings that would be necessary and sufficient to pay the estimated normal dividends. As we know, the latter are derived from the earnings trend and are already adjusted for changes in their growth rates. They can be raised to the level of normal earnings by applying the multiplier expressing the long-term relation between their respective trend lines.

Once an acceptable level of earning power has been determined, normal price can be easily found. By dividing the mean annual price by a figure expressing the earning power for that particular year, we obtain the capitalizer used by the market. We can repeat this simple calculation for each of the years of the period on which we are working and then find the average capitalizer applicable to it. The calculations do not necessarily have to be made in annual figures. We can select those most appropriate for the length of the period and the problem in mind.

The previously mentioned DJIA appraisal in *The Chronicle* of October 30, 1958 shows how this simple method can be applied in actual practice. A more sophisticated procedure using correlations of earnings-to-price ratios and deviations of current earnings from earning power was described in "A Theory of Price-Earnings Ratios", *The Analysts' Journal*, November 1953.

The Role of Market Value

Our terms are convenient short labels, not final definitions. Other and perhaps better names could be devised. For instance, Benjamin Graham suggests adding 'Fair' or 'Average' to 'Market Value'. John Burr Williams favors 'Normal Price' instead of 'Market Value' and 'Normal Earnings' in place of our 'Earning Power'.

Whatever the name, many experienced investors will agree that a concept of normal price is sound and its application may be fruitful. Numerous investment approaches have been developed along the lines of this type of thinking. Formula plans can often be reduced to this idea. Graham's 'Central Value', probably the best known of all investment tools, functions in the same general area.

The reality of price is so intense that we easily become dazzled by its brilliance. No amount of rationalizing can alter the absolute certainty of its existence. Like the sun, it has its own cult. Its members worship it as an omniscient deity of the investment universe and deliberately shut their eyes to all other facts or relations which look pale and insignificant in the presence of their god.

Price is fascinating and romantic. Its changes turn mansions into tenements and rags into riches. But the very unreliability of its mercurial nature stimulates hard-headed search for firmer ground.

The correction of price by finding its normal level is a long step in the right direction. Out of the fireworks comes a discernible pattern. Habits and norms of behavior emerge. We become better acquainted with the types of market action of various individual stocks and industrial groups. Even large combinations or averages of important stocks, such as the DJIA or the Standard 90, begin to show their nature.

All these different market personalities seem to pursue rather independent lives. A stock enjoying a high growth rate may sell at a lower earnings multiplier than another stock in the same industry whose earnings show a much flatter curve. Long-standing respect for a certain management and distrust of another may delay for a long time an equalization of their capitalizers. Other psychological influences may sidetrack indefinitely what looks like the normal capitalization process.

But often too we observe in the market what looks like inexplicable action. Long sleeping volcanoes erupt. The earnings of a stock may be rising for several years without much response from price. Suddenly, its price level will shoot up to a new plateau that may, in turn, serve as a springboard for another similar spurt. This type of action occurs also in the case of industrial groups, or even the entire market. Investors may remain skeptical for years and then, without warning, become convinced that a structural change has taken place.

Like a constellation of celestial bodies moving into space, preserving characteristic interrelations, stocks, in the minds of many investors, preserve their typical capitalizers as they move forward into time. However, this faith that stocks maintain status quo positions in a moving valuation universe precludes any understanding of such stock market phenomena as Polaroid, Texas Instruments, or even IBM, or the recent acquisitions of investment status by the steels and the rubbers. This view made it also quite impossible for many observers to grasp the realities of the dramatic story of the stock market in 1958. When its price level, as measured by indexes such as DJIA, broke through the ceiling of the normal price and surged irresistibly forward, it was not, as so many believed at the time, free-wheeling in outer space but only rejoining its master—its intrinsic value.

Normal price, or market value, or price orbit, or whatever other name we may wish to give it, is an important measure. We must listen with respect to the market voicing its own opinion. If its conviction is strong, it will not easily be swayed. Yet the market will not remain stubborn without reason. It is eager to recognize reality, as this is the road to financial reward.

If we can project future earnings more accurately and capitalize them more correctly than the market does at the moment, we may assume that market value will tend to move in the direction of such an intrinsic value until they rejoin. The market's traveling speed toward this goal will be conditioned by the degree and timing of public recognition of the correct projections and the cyclical hazards along the road. But intrinsic value is the objective towards which market value is drawn.

Connecting Links

In the section dealing with *Earning Power* it was brought out that normal dividends, which perform such a vital function in the computation of intrinsic value, can also help to determine the level of earning power and thereby market value as well.

It is therefore no exaggeration to say that normal dividends are not only an important working tool but also a central concept for the valuation of common stocks. They serve as a connecting link between intrinsic value and market value or normal price. And this is also true of the function of payout.

A price-earnings ratio based on current earnings may be viewed as an earnings payout. It shows the number of years earnings would have to accumulate at the current annual rate to equal current price. Except for the absence of discount, this concept comes close to that of present worth. At first it seems quaint that normal price, or the market's own idea of value, should have shining through it the basic concepts of normal dividends and payout. Yet if we look again at the chart of Basic Relations, we realize that this is exactly how it should be. This concurrence strengthens both concepts and makes them mutually consistent.

Theoretical normal dividends, once they are stretched out along a secular line, become identical with the dividends trend line. And the earnings payout leads directly to intrinsic value as soon as a missing link, the discount rate, is installed once more in its central role. Its return permits us

to draw once more on the basic chart the line of present worth which transforms average price into intrinsic value.

Intrinsic Value and Normal Price

By equating, in a secular perspective, average price with present worth, the chart of Basic Relations issued a mandate to investigate, test and report the possibilities of using the concept of present worth for comparing the investment values of common stocks.

Our schedules of comparative values for six industrial stocks show how this concept can be applied. Our goal was attained. We have built a standard of value which is its own master and is completely independent of price.

It seems doubtful that a better measure of value could be devised for those investors who look through and beyond business and market cycles and plan for secular growth alone. It offers a long-term basis of comparative appraisals which many investment managers claim to be their goal.

Incorporating within itself the pull of basic economic factors, intrinsic value is endowed with a magnetic force. Investment in common stocks is risk investment. The rates of decay and mortality of capital are high. Each cyclical contraction is an acid test. But those enterprises which have sufficient inner strength will ride out the recession and during the next phase of expansion the prices of their stocks will again approach and perhaps exceed their intrinsic values.

In periods when the economy has only recently left a cyclical test behind it, and is again embarking upon an expanding phase, investors' confidence should be greatly strengthened when they can buy stocks below their intrinsic values. They have then everything working in their favor.

Needless to say, not only prices but values as well are subject to change. Statistical tables showing projections of earnings trends and other vital data, as well as the comparative schedules, should be at all times kept up-to-date.

Our work on market value, price orbit and normal priceearnings ratios, published as a series of articles in this Journal during the last six years, bears witness to our conviction of the importance of normal price. But we feel strongly that it is even more important for investors to be prepared and to be looking for reappraisals. Both an intrinsic value based on present worth, and a fair market value representing normal price, should be familiar tools in the hands of all investors. Intrinsic value provides the longterm objective. Market value, in turn, reveals the limits within which normal price has been contained so far. By confronting them, investors may often become alerted when the market is getting ready for a reappraisal.

We regret that the limits of this study, which have already been greatly transgressed, do not allow us to add to the comparative valuation schedules of our six stocks corresponding studies of their market values. We hope to repair this omission in our forthcoming valuation reports.

The Art of Investment

The subject of this study is valuation. We can merely mention other factors influencing the prices of stocks.

Intrinsic value is completely free from price. It is an independent and self contained standard. Market value, on

the other hand, is still a prisoner of price. But being based on average earnings it is more static.

Stock prices are essentially dynamic. The more aggressive investors may wish to use, in addition to valuation, also other techniques geared to studying relations of the demand for and supply of stocks. Values are less sensitive than direct market analysis to such factors as changing institutional investment patterns, varying volumes of new equity financing, the effect of competing investment outlets, or the changes in their relative attraction due to shifts in the money market itself. Market analysis, when practiced with competence and restraint, can be useful in these areas.

It is not improbable that we entered last year the final phase of a bull market originated in 1949. A period of overspeculation in secondary stocks may be therefore expected. The methods developed by this author in "New Tools for Stock Market Analysis" and "The Core and the Margin" could then be especially useful for locating the turning area at the top.

The schedules of comparative intrinsic values organize more effectively such knowledge as we may have and reduce our ignorance to common measures. They provide a standard for measuring impartially all stocks. Studies of market values will help us to learn the present position of normal price with respect to this standard. Market analysis can give us an insight into the existing balance of supply and demand.

Beyond this, as Kenneth Hanger, a hard-working young private investor, wrote recently:

"It still is true, isn't it, that when you and I, or others, are interested in a company, we investigate it, compare it, analyze it, check it, think about it, and in general bring all our mental faculties to bear upon it, and then—if and when we invest—we hope."

FOOTNOTES

- 1. The author is indebted to Catherine R. May for her collaboration in preparing this study. In particular, she developed the mathematical formulæ used in the computations, made all the calculations and drew the chart. He is grateful also to Martha Anderson for grooming the text.
- 2. How to Play Your Best Golf All the Time, Tommy Armour, Simon & Schuster, 1953, p. 148.
- 3. The Terry Lectures On Understanding Science, James B. Conant, Yale University Press, 1947, p. 80.
- 4. Common-Stock Indexes, Alfred Cowles 3rd & Associates, Principia Press, 1939, p. 2.
- 5. Outlines of other methods of valuation may be found in the back issues of *The Analysts Journal, The Journal of Finance*, and other economic and financial publications. Many significant contributions to the subject have been made in recent years.
- 6. The Index of Wholesale Prices in the U. S., compiled by the Federal Reserve Bank of N. Y. from indexes constructed by the U. S. Bureau of Labor Statistics, and for the early period by J. L. Snider.
- 7. Chelcie C. Bosland, The Common Stock Theory of Investment: Its Development and Significance (Ronald Press, 1937, p. 4).
- 8. See 'Stock Prices and Current Earnings', *The Analysts Journal*, August 1955, and Thor Hultgren's Note in the Thirtysixth Annual Report (May 1956) of the National Bureau of Economic Research.



Some time in 1960, the New England area's first atom-powered electric plant at Rowe, Massachusetts, will send power surging through this vigorous region. And New England's many hydro and steam generating plants will proudly welcome this new partner.

All this means good living and profit to New Englanders - and profit, too, for farsighted folks in other sections of the country who have investments in New England business and industry

A note to our Area Development Department, Room C, 441 Stuart Street, Boston 16, will bring you prompt information about good New England plant locations.

Two New Tools for Evaluating Companies Within an Industry

by Walter J. Talley, Jr.

THE PURPOSE OF THIS ARTICLE is to present two measurements for evaluating companies within an industry. However, it is not intended that these measurements should replace any of the commonly used ratios, now finding application for evaluating companies. It is felt that these two tools are easy-to-use yardsticks of a company's growth and stock position within an industry. These two measurements can be most efficiently used in a preliminary evaluation of a company position within an industry, and leave the secondary and more detailed analysis of the company to the presently used ratios and measurements.

AN EFFICIENT MEASUREMENT OF A COMPANY'S POSITION AND GROWTH

The first tool to be discussed is a means of measuring a company's growth, and position within an industry. In determining any company's sales position and growth it is normal to analyze the company's sales, not only in absolute terms (dollars, quantity, number of items, etc.), but also in relative terms (percent share of market). Too often we tend to evaluate a company in absolute terms, by financial ratios, and we lose sight of the company's relative position and growth within the industry.

In analyzing sales, we measure the relative position of any company within an industry and its growth by percent share of market. So, in analyzing the company it would seem that the most efficient measure of growth within a specific industry is that one company's changing share of the net profits of the industry. Net profit was selected as the most significant measure for this purpose, since in our free enterprise economy every company must make a profit to exist. Thus, the net profit becomes the most important of any single measure of success.

For the purpose of illustrating the use of these two measurements, the petroleum industry was selected. It is well to remember at this point, that these two complementary measures are just the first stage in evaluating an industry and that this article is not intended to present a complete evaluation of the petroleum industry, nor is it intended to replace present measures. For ease of computation, 25 companies were selected to represent the petroleum industry. These 25 companies represent the top 25 domestic petroleum companies as measured by 1955 sales.* The net profit for these 25 companies was determined from 1939 through

*Warren Petroleum, one of the 25 selected during 1955, was acquired by Gulf in 1956. Thereby making only 24 companies in this study during 1956 and 1957.

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1957. Each company's share of the net profit of the petroleum industry was calculated. Graph II is a graph of most of these 25 companies.

The first thing that is immediately obvious from graph II is the relative size of any company compared to its competitors. Since net profit for the year 1939 represents the extreme left bar, and net profit for 1957 represents the extreme right bar, an increasing share of net profits from left to right indicates a company growing faster than the industry. In order to understand better what any company's share of the net profits for any specific year means in terms of dollars, the total net profits as represented by these 25 companies were plotted by year on graph I. During the years 1942 through 1945, exploration and construction were extremely limited due to wartime restrictions. It was determined, therefore, that these three years (1942-1945), for growth purposes, could be represented best as one year on these graphs.

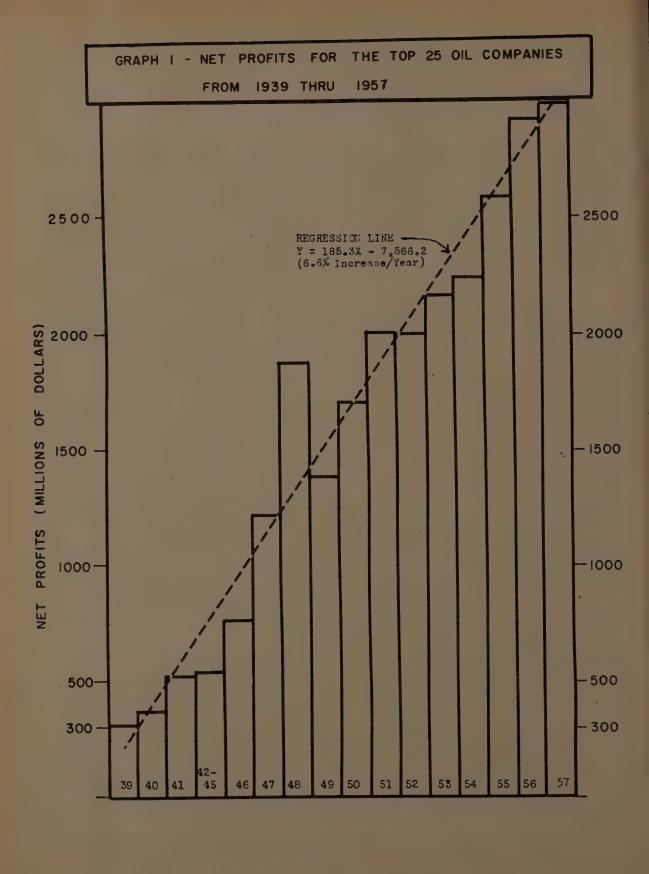
A trend line of the least squares (regression type) was determined for graph I. Any line of this nature has serious limitations if it is extrapolated beyond the time period for which it is calculated. However, this trend line indicates \$185 X 106 increase in net profits a year from 1939 through 1957 for the industry. This means that any company which remains constant in share of market, on graph II, is increasing its net profit at the industry rate.

The case of Socony Mobil Oil illustrates the severity of using percent net profits as a yardstick. Socony Mobil increased in absolute dollars of net profit from \$34 million in 1939 to \$220 million in 1957, however, during the same period they declined in share of net profits from 10% in 1939 to 7.4% in 1957. Under this severe criteria only nine companies stand out as growing faster than the industry. These are: Gulf; Standard of California; Sun Ray Mid-Continent; Standard (New Jersey); Amerada Petroleum; Shell; The Texas Oil Co.; Ashland Oil; and Richfield.

Future net profits might be forecast by using these two graphs as follows:

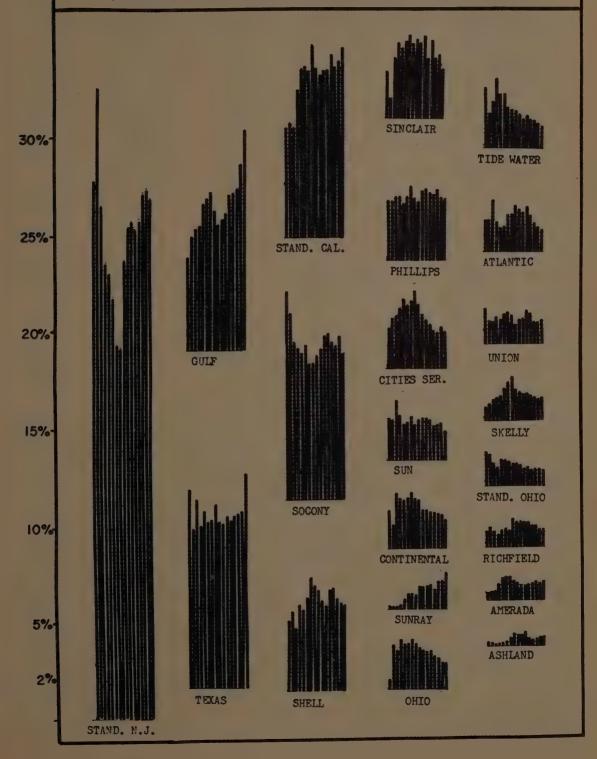
- 1. Extending the trends in share of net profit as shown by graph II.
- 2. Adjusting these trends based upon factors, which will have importance on a company's profits, such as foreign crude position, import allocations, etc.

Once these projections of future percent of net profit have been determined, and they must add to 100%, the trend indicated by graph I could be used to estimate total net profits of the industry. If future projections were carried beyond a three to five year range, more background data should be obtained on graph I and a "Gompertz" type of growth graph fitted to these points.



GRAPH-II GROWTH - AS MEASURED BY SHARE OF NET PROFIT

(1939 THRU 1957 - WITH 1942-1945 REPRESENTED AS I YR)



	1			4
	NET PROFIT	% OF NET	ASSETS	ASSETS ADJUST
COMPANY	(x 103)	PROFIT	(x 10 ³)	EARNINGS (X 1
Standard (N. J.)	\$ 805.178	26.87%	\$ 8,712,387	\$ 9,329
Gulf Oil	352,284	11.76	3,240,570	4,083
Socony Mobil	220,433	7-35	3,105,252	2,552
Standard Oil (Ind.)	151,509	5.05	2,535,023	1,753
Texas Co.	332,304	11.09	2,729,095	3,850
Shell Oil	135,085	4,51	1,384,544	1,566
Standard Oil (Calif.)	288,230	9.61	2,246,296	3,336
Sinclair	79,308	2.64	1,480,616	916
Cities Service	59,179	1.97	1,279,177	684
Phillips	96,209	3.21	1,519,631	1,114
Sun Oil	47,493	1.58	653,198	548
Continental Oil	46,724	1.56	603,599	541
Atlantic	35,670	1.19	751,381	413
Pure Oil	35,524	1.18	522,926	410
Tide Water	34,937	1.16	797,413	403
Union Oil	38,235	1.27	673,212	441
Standard Oil (Ohio)	23,920	0.80	386,305	278
Sunray-Mid Continent	57,155	1.91	537,894	663
Ohio Oil	41,490	1.38	393,895	479
Ashland Oil	16,219	0.54	186,328	187
Richfield Oil	28,176	0.94	358,070	326
Skelly Oil Warren*	36,785	1.23	367,064	427
warren* Amerada	Gulf	1 00	165 107	⇒ 21.07
Plymouth	29,949	1.00	165,497	347
- Tymoden	6,030	0.20	88,158	69
Total ·	\$2,998,026	100.00	\$34,717,531	\$34,715

*Since Warren became a part of Gulf, there are actually only 24 companies.

A MEASURE FOR EVALUATION OF A COMPANY'S STOCK

Just as in measuring a company's growth, relative measures have advantages; thus, in evaluating a company's common stock similar relative measures within the same industry make for an efficient yardstick. In determining a relative measure of a company's stock, the following factors were considered important:

1. The earning power of the company as represented by net profits.

2. Outside ownership or claims upon the company having priority over the common stockholder upon liquidation.

3. The market evaluation of the common stock, i.e., number of shares of stock outstanding multiplied by market price.

These three important factors were weighed to form an evaluation ratio for each company and for the industry by year. However, for purposes of this article only the year 1957 will be presented. The market evaluation of the stock, as represented by the market price multiplied by number of shares outstanding, plus outside claims upon the company were measured as a percent of the earning power of

the company. To keep these terms in approximately a balance sheet-type relationship, earning power was represented by a reallocation of the total assets of the top 25 companies back to each company based on that company's share of net profits. (Refer to Table 1 for illustration.)

As an example, the evaluation ratio for Standard Oil (New Jersey) will be developed. In determining the market evaluation of a company, the number of shares outstanding during any year were multiplied by the high and low prices for that year as given in Moody's Industrial Manual. For Standard Oil (New Jersey) during 1957 there were 203.488,402 shares of common stock outstanding with a market high of 68½ dollars and a low of 47 5/8 dollars. This makes the market's evaluation of net worth for Standard Oil (New Jersey) in 1957 between \$13,939 X 106 to \$9,690 X 106.

Other ownership and outside claims upon the company were separated from the common stockholder's claims by using as a yardstick the claims and obligations any company must perform upon liquidation before distribution to the common stockholders. In this study, a comprehensive search of the balance sheet accounts of the 25 oil companies was necessary. The following is a list of actual balance

5	6	7		8	
				OWNERSHIP	EVALUATION
	AMOUNT /,	PUBLI	:C _	BY OUTSIDE	. RATIO
AVERAGE	OF STOCK	_EVALUATIO	$(x 10^6)$	INTEREST	COL. 7 + 8 X 100
STOCK PRICE	OUTSTANDING	(HIGH)	(LOW)	$(x 10^6)$	DIV. BY COL. 4
\$68-1/2-47-5/8	203,488,402	\$13,939	\$9,690	\$2,821	180 - 134
152 - 105-1/2	31,130,789	4,732	3,284	1,035	141 - 106
65-3/8-45-1/8	48,310,195	3,158	2,180	627	148 - 110
62-1/2-35-1/2	35,769,010	2,236	1,270	473	154 - 99
76-1/2-54-3/8	55,937,434	4,279	3,041	673	129 - 96
91-1/2-82-1/8	30,286,384	2,771	2,487	407	203 - 185
59-7/8-43-1/4	63,224,386	3,785	2,734	367	124 - 93
68-1/2-45-1/2	15,312,653	1,049	697	509	170 - 132
71 - 47-3/8	10,518,804	747	498	651	204 - 168
53-1/4-35-3/8	34,350,769	1,829	1,232	528	212 - 158
82 - 67-1/2	11,397,582	934	769	124	193 - 163
70-1/4-41-1/2	19,627,502	1,379	814	223	296 - 192
57-3/8-36-1/2	8,986,970	516	328	295	196 - 151
48-7/8-29-3/4	8,602,469	420	256	151	139 - 99
42-1/4-19-3/8	12,594,965	532	244	410	234 - 162
64-1/8-40	7,716,743	496	309	258	172 - 129
62-1/4-40-1/2	4,827,093	300	195	150	162 - 124
29-1/2-20	17,353,708	511	347	188	105 - 81
44-7/8-28-1/2	13,126,753	589	374	38	131 - 86
19-7/8-14-3/8	5,728,559	114	82	103	116 - 99
80 -56-1/2	4,000,000	320	226	135	140 - 111
80-3/4-49	5,746,117	464	282	42	118 - 76
-	-	-	-	•	-
147-1/2-88-1/2	6,313,010	930	560	14	272 - 165
38 - 22-3/8	2,509,758	95	57	33	186 - 130
	,				
		\$46,125	\$31,956	\$10,255	162 - 122

sheet accounts which were considered as representing claims preceding the common stockholder:

Notes Pavable

Accounts & Accruals Payable

Accrued Taxes

Long Term Debt

Debentures

Purchase Obligations

Bank Loans

Employees Compensation Reserve

Funded Debt

Minority Interest

Reserve for Annuities

Other Subsidiary Debts

Promissory Notes (Co.)

Other Company Debentures

Miscellaneous Obligations

Federal Income Tax Provision

Accrued Interest

Accrued Payroll & Commissions

Deferred Federal Income Taxes

Federal & Foreign Income Tax Reserves

Accrued Royalties

Deferred Credits & Income

Unearned Income.

For Standard Oil (New Jersey) in 1957 these accounts totaled \$2,821 X 10⁶. The following liability and net worth accounts were considered to be another form of capital surplus, that is, representing moneys to which there is no prior claim before the common stockholder:

Reserve for Insurance

Dividends Payable

Reserve for Contingents

Operating Reserves

Contingent Res. for Foreign Invest.

Surplus, Appropriated Surplus

Capital Stock

Treasures Stock at Cost

F. I. T. Res. for Contingencies

Incentive Compensation Plan

Foreign Exchange Fluctuations Res.

Miscellaneous Reserves

Inventory Replacement Reserves

The numerator of the evaluation ratio for Standard Oil (New Jersey) is made up of \$2,821 X 10⁸ of other ownership and outside claims plus a public evaluation of \$13,939 X 10⁸ to \$9,690 X 10⁸.

Earning power was represented in terms of reallocating total assets in proportion to percent of net profits. For the petroleum industry (during 1957) an average of 11.6 dollars of assets produced \$1 of net profits. An adjusted asset figure for any company can be developed by multiplying 11.6 times each dollar of net profit in 1957. For Standard Oil (New Jersey), this adjusted asset figure representing earning power was \$9,329 X 10°. This compares with an actual asset figure for Standard Oil (New Jersey) of \$8,712 X 10°, indicating that Jersey Standard's assets were more productive than the industry average. Due to the nature of allocation of the total assets back to each company, these adjusted assets total the same as the actual assets for the industry.

LOW EVALUATION RATIO SIGNIFICANT

At this point the evaluation ratio was determined by adding to other ownership the public evaluation and dividing by earning power (result multiplied by 100). This results in a high ratio of 180 and a low ratio of 134 for Jersey Standard in 1957.

The real value of this ratio is in comparing it to the other oil companies for the same year (see Table 1 for this comparison). The evaluation ratio by definition means that every \$11.6 of earning power will result in \$1 of net profit. Therefore, if during 1957 every company were

equally evaluated by the market (i.e. by the model used in this study), all ratios should be equal.

The evaluation ratios for 1957 range from Amerada's high of 272 to Sun Ray Mid-Continent's low of 81.

A low evaluation ratio is of particular significance to the management of that particular company, since it is probable that a few aggressive moves on the part of this company would cause the market place to value its stock more towards the median of that industry. This evaluation is of less use to the speculator since the market place will probably not shift its evaluation of a company without some aggressive move on the part of that company's management. The evaluation ratio, due to the nature of its design, sets up low outside ownership and claims as a desirable condition for any company. This was done since low outside ownership means the possibility of future capital acquisition through this channel, which could result in higher profits. High levels of outside ownership and claims indicate a company whose outside sources of capital are more limited.

Thus, from this analysis it can be seen that these two relative measurements give an unusually objective picture how a company is growing and how its stock is evaluated compared with the remainder of an industry.

ROME CABLE

79th Consecutive Dividend

The Board of Directors of Rome Cable Corporation has declared consecutive Dividend No. 79 for 25 cents per share on the Common Stock of the Corporation, payable January 3, 1959, to holders of record at the close of business on December 22, 1958.

GERARD A. WEISS, Secretary Rome, N. Y., December 10, 1958



COMMON STOCK DIVIDEND

The Board of Directors of Central and South West Corporation at its meeting held on January 15, 1959, declared a regular quarterly dividend of forty-five cents (45c) per share on the Corporation's Common Stock. This dividend is payable February 27, 1959, to stockholders of record January 30, 1959.

LEROY J. SCHEUERMAN Secretary

CENTRAL AND SOUTH WEST CORPORATION

Wilmington, Delaware



GEOPHYSICAL prospecting for oil, with its spectacular "shot hole" explosions, is the first link in the chain of operations which keeps America supplied with vital petroleum products. The search continues, day after day, despite the fact that oil companies face up to 10 failures for every single oil or gas discovery in new territory. More than one company's existence is at stake; a large share of our national defense depends on a continuance of the mineral depletion provisions in our laws which assure that oil progress and America's progress go hand in hand.

SUNRAY OIL CO.

D-X—brand name of quality products manufactured by D-X Sunray Oil Co., a wholly-owned subsidiary.

SUNRAY MID-CONTINENT OIL COMPANY

General Offices — Sunray Bldg. — Tulsa, Okla.

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The Board of Regents
Announce

The 1959 Financial Analysts Seminar

To be conducted by

The National Federation of Financial Analysts Societies

in association with the University of Chicago

TO BE HELD AT BELOIT COLLEGE FROM AUGUST 24 TO AUGUST 29, 1959

The program will cover

1

The seminar provides a unique opportunity for top-flight senior analysts to hear noted educators, economists and analysts. The seminar includes lectures and panel discussions.

ANALYSIS OF THE ECONOMY

- a Long-run Stabilizing and Destabilizing Forces
- **b** Monetary and Credit Policies
- c Treasury Policy and Management of the Federal Debt
- d International Economic Problems and Policies
- e Techniques for Analyzing Business Conditions
- f Long-run Factors Affecting Corporate Profits

THE METHODOLOGY OF SECURITY ANALYSIS

- a Trends in Security Analysis
- **b** Factors Influencing the Appraisal of Growth Industries
- c Gauging the Investment Value of Electrical Utility Common Stocks
- d Security Valuation and Investment Policy
- e Basic Measures of Stock Values
- f Analysis of the Cash Flow as a Method of Security Analysis
- g Technical Market Analysis
- h How I Determine Relative Value—A Case Study

A copy of the brochure and form for application for admission will be sent to all members of constituent societies of the National Federation on March 20, 1959. It is suggested that applications be submitted promptly after receipt of this material.

Attendance at the seminar is limited to 100 analysts.

Those desiring additional information should write to Marshall D. Ketchum, Director of the Financial Analysts Seminar, School of Business,
The University of Chicago, Chicago 37, Illinois.



CONDENSED FINANCIAL REPORT

DECEMBER

1958



200 basic models and sizes to fit every material handling problem!

The Company has mailed to all shareholders as of February 17, 1959, a preliminary report containing the financial statements for the year ended December 31, 1958. The financial report and operating particulars presented here, in condensed form, have been prepared by the Company from the more detailed financial statements certified by the company's public accountants, Price Water-house & Co. Copies of the preliminary report to shareholders are available upon request sent to the Secretary at the home office of the company at Buchanan, Michigan.

CLARK EQUIPMENT COMPANY

SALES, INCOME AND OTHER PARTICULARS FOR THE CALENDAR YEARS 1958 AND 1957

Net Sales	140 \$143,063,032
Income before federal income tax\$ 11,948,0 Provision for federal income tax 5,500,0	
NET INCOME for the year\$ 6,448,5	\$ 8,229,396
CASH DIVIDENDS: Common stock—\$2.00 per share in 1958 and \$2.25 per share in 1957	
TOTAL DIVIDENDS\$ 4,786,3	\$ 5,204,969
EARNINGS—per share of common stock outstanding (after dividends paid to preferred shareholders) \$2.70	\$3.57

Balance Sheet—December 31, 1958

President

ASSETS

CURRENT ASSETS: Cash..... \$ 6,970,173 Accounts receivable...... 19,763,781 Prepaid expenses..... 874,263 \$ 71,365,251 INVESTMENTS..... 11,542,649 LAND, BUILDINGS AND EQUIPMENT..... \$52,530,039 Less-Depreciation 21,936,474 30,593,565 \$113,501,465

LIABILITIES					
CURRENT LIABILITIES	\$ 20,627,986				
LONG TERM NOTES PAYABLE	30,700,000				
CAPITAL STOCK AND					
RETAINED EARNINGS:					
Preferred 5% cumulative—par value \$100 per share (5,815					
shares)\$ 581,500					
Common—par value \$15 per share (2,381,001 shares) 35,715,015					
Capital in excess of par value of shares					
Earnings retained and used in					
the business					
\$62,238,327					
Less—Cost of 3,088 common shares held in treasury 64.848	62.173.479				
Shares held in Measury 04,646					
	\$113,501,465				

Forecasting: 'Growth Stocks for Income'

by Robert E. Greeley

FOR INDIVIDUALS DESIRING A FUND for retirement or for the education of their children, there has been little disagreement concerning the advantages of investment in growth stocks versus those characteristic of income. The now standard comparison of the Cost-of-Living Index with the Dow Jones Industrial Index, or the Standard and Poor's Index, shows the outstanding long-term trend in the investment of common stocks as protection against the devaluation of the dollar, and as an excellent capital investment media.

Table A

Year	Consumer Price Index (1947-1949 = 100)	Dow Jones Industrial Index (Adj.) (1947-1949 = 100)
1946	83.4	95.2
1947	95.5	97.3
1948	102.8	95.2
1949	101.8	107.5
1950	102.8	126.4
1951	111.0	144.6
1952	113.5	156.8
1953	114.4	150.9
1954	114.8	217.1
1955	114.5	262.3
1956	116.2	268.5
1957	120.0	234.5

Source: Department of Labor Wall Street Journal

As a scrutinization of Table A indicates, the relationship between common stocks and the cost-of-living is not a perfect one. However, the level of equity prices has tended over a period of years to move at a higher rate than the Consumer's Price Index. Over shorter periods of time, since the factors affecting the equity markets and those influencing the cost-of-living are not completely and solely the same, there have been several diverse movements between these two indexes.

During the early post World War II period, the cost-ofliving began to soar; wartime price controls were lifted; and the scarce consumer goods markets were priced upwards. In the financial markets, most of the 1946 thinking was vented towards the post-war depression that was considered inevitable. Several studies from eminent students of economics and history pointed out the 1920 depression as an aftermath of World War I, and stressed the secular stagnation that dominated the pre World War II economy. Some writers went back even further to the Revolutionary or Civil War periods for comparison.

The securities markets began to rise with the outbreak of the Korean War, government spending, and special tax programs to finance the increased Federal Budget. The

Robert E. Greeley, investment analyst for the University of Rochester Endowment Fund, is the author of several articles on portfolio management. Formerly with Merrill Lynch, Pierce, Fenner & Smith, Mr. Greeley attended the New York University Graduate School of Business where he studied under a U.S. Steel Foundation Fellowship.

cost of living, unregulated during this "police action", rose almost 10% during the first war year. The secular stagnation thinking was reversed due to big government spending for war and defense which stimulated the economy and thereby maintained full employment.

After the end of the Korean War the readjustment was checked; but the stock markets continued their upward price movements. The post war record has therefore been dynamically in favor of common stocks as a better than average protector against a decreased future purchasing power.

This trend, however, has perplexed many groups—especially those who need the current income of their investments for sustainence or to balance their operational expenses. Since most common stock funds have the choice of investment in stocks of the "growth" or "income" type, we have attempted to compare the relative results of investment in each of these two categories.

Because most funds tend to diversify in order to spread the risk, we have selected 10 stocks which are currently considered to be "growth" stocks. In the "income" group we have selected 10 high-grade stocks which would be the writer's choice for liberal dividends. Each group is open to criticism; but it is believed they are considered to be a reasonable example of the "growth" and "income" classifica-

The following represents those companies which have been classified as "growth" companies because of their large capital and research expenditures, excellent operating margins, and success in their respective fields of endeavor:

American Cyanamid
Corning Glass Works
E. I. duPont de Nemours and Company
Eastman Kodak
Florida Power Corporation
General Electric Corporation
International Business Machines
Merck
Standard Oil Company of New Jersey
The Texas Company

The following would appear to be better classified as good dividend payers or "income" stocks, although several have been called growth stocks from time-to-time:

American Can
American Telephone and Telegraph
American Tobacco Company
Bankers Trust Company
Borden Company
Boston Edison
Coca Cola Company
General Mills
International Harvester
National Dairy

February 1959 109

Table I

YEAR	INCOME Growth	INDEX Income	YIELD AFTER Growth (Yield							
1946 1947 1948 1949	100 112 117 154	100 109 109 133	(3.4%)	(4.2%)	100 94 95 125	100 93 89 103				
1950	228	138	7.8%	5-7%	146	' 101				
1947 1948 1949 1950	100 106 138 203	100 108 115 124	(4.3%)	(5.0%)	100 101 133 155	100 96 111 109				
1951	199	127	8.5%	6.4%	213	114				
1948 1949 1950 1951 1952	100 132 206 202 208	100 107 115 113 115	(4.4%) 9.3%	(5.7%) 6.4%	100 132 154 211 227	100 116 113 119 130				
1949 1950 1951 1952	100 151 149 151 164	100 . 109 110 108	(4.6%)	(5.1%) 5.7%	100 117 160 173 181	100 98 103 113 116				
1953	104	111	5.8%							
1950 1951 1952 1953	100 99 101 105	100 96 99 101	(5.6%)	(5.6%)	100 137 148 155	100 105 115 117				
1954	125	102	7-1	5.7%	224	134				
1951 1952 1953 1954 1955	100 102 113 129 147	100 99 101 103 105	(4.1%) 6.0%	(5.5%) 5.7%	100 108 113 140 174	100 109 112 129 136				
1952 1953 1954 1955	100 110 127 143	100 103 103 106	(3.9%)	(5.0%)	100 105 130 161	100 103 118 124				
1956	165	114	6.4%	5.8%	183 1	115				
1953 1954 1955 1956	100 113 129 145	100 102 105 111	(4.1%)	(5.3%)	100 124 154 175	100 118 121 111				
1957	154	112	6.3%	5.8%	186	137				
1954 1955 1956 1957	100 114 123 138	100 103 109 110	(3.3%)	(4.6%)	100 124 141 150	100 105 97 96				
1958	141	110	4.5%	5.1%	213	119				

From the end of World War II to the present, the current yield (annual dividend divided by the last sale of that year) on a portfolio equally divided dollar-wise among these several companies would have achieved the following comparative results:

Year	Growth	Income		
1946	3.43%	4.15%		
1947	4.27	5.02		
1948	4.44	5.57		
1949	4.61	5.12		
1950	5.64	5.60		
1951	4.12	5.45		
1952	3.86	5.04		
1953	. 4.06	5.15		
1954	3.26	4.59		
1955	2,97	4.45		
1956	3.03	5.07		
1957	3.09	5.25		

On an annual basis the average performance of the income stocks would be much better than the growth stocks. However, where there is an option as to the investment of principal to meet operating expenses, current and anticipated, it is interesting to measure the record of "growth" and "income" stocks over a five year period, during the post

war era, and the advantage gained by investment in growth stocks. In addition, the number of years necessary for the "growth" stocks to reach the income dividend payment is another factor in the consideration of growth stocks as supplements to portfolios principally concerned with income.

Table I shows the five-year comparisons of a portfolio equally diversified among the "growth" and "income" stocks previously mentioned from 1946 to 1954. The dividend income and principal value of the portfolio is compared on the basis of greater or lesser amounts from the basic year of investment. The yield on the portfolio after five years is also indicated as well as the yield on the stock group when the committment was first made. In each five-year group, the earlier year was dropped.

As the figures show, the difference in yield on book cost after five years has worked out to the advantage of the "growth" stocks. This was generally the case in all the comparisons and appears to more than sufficiently satisfy the smaller payout of some of the "growth" stocks. While doubling in principal value of money invested, compared with a modest increase in value for "income" stocks, "growth" securities have tended to equal or better "income" stock yields in one to seven years, depending on the year the portfolio was invested.

YEAR Million Dollar Investment	1	YEARS NEEDED for growth stock yield to equal	MARKET VALUE per MILLION DOLLARS when yields on growth stocks reach the yields on income stocks							£.	LOSS OF INCOME during these years					A NET GAIN over several years	DIVIDED by years in Column 1	ANNUAL INCOME GAIN from principal
	1	income stocks	GROW:	PH.	~	/ INCOM	Z	*	NET GAIN	4.	INCOME		GROWTH		NET LOSS	severar years	COLUMN 1	appreciation
1946		4	1,150	0,00	0	1,030,	000	-	220,000		191,000		166,000	-	25,000	195,000	L	4.9%
1947		3	1,330	0,00	0	1,110,	000		220,000		162,000		147,000		15,000	205,000	3	6.8
1948		2	1,320	0,00	0	1,160,	000	*	160,000		116,000		103,000	-	13,000	147,000	2	7.3
1949		5 1 ×	1,170				000		172,000		56,000		44,000	-	12,000	160,000	1	16.0
1950		0	1,000			1,000,	000		-0-		56,000		56,000		-0-	-0-	0	-0-
1951		5	1,740			1,360,	000		380,000		277,000		243,000	-	34,000	346,000	5	6.9
1952		4	1,430			1,240,	000	*	190,000		207,000		135,000	-	22,000	168,000	4	4.2
1953		3	1,540			1,210,		-	330,000		215,000		198,000		17,000	313,000	3	10.4
1954 (e)		7	2,130	0,00	0	1,190,	000	*	940,000		357,000		312,000	*	45,000	845,000	7	12.2

⁽e): estimated. Appreciation based on year end 1958 and dividend projections on growth versus income stocks based on equal yields anticipated at the 1960 year end.

Table II shows the number of years which are necessary for growth stocks to equal the yield on cost for income stocks. An adjustment has been made deducting the difference in the princial values of these two groups of stocks, and the net difference in the dividends received, while the yield on the growth stocks reaches the income level. By dividing the number of years needed to balance the yields on book value or cost, we have a simple measure of the additional yield acquired through the selection of growth stocks. Although this figure is not all meaningful per se, it does serve to guide the trained eye to the advantages of growth stocks in an income portfolio.

The portfolio manager of an income account cannot overlook his primary duty of selecting securities with a liberal payout. Nevertheless, the recent record of growth equities does afford the opportunity of investment in growth securities for income purposes. Unless the needs of the portfolio call for the maximum yield available from the capital committment, the investment in growth stocks will, as the past record demonstrates, afford equivalent yield on cost after one to five years. An additional yield is also afforded from capital appreciation sources. This additional yield (which may fluctuate over short periods of time) has, as the record further demonstrates, moved upward over a period of several years so that additional income can be obtained from this source.

SUMMARY

While the crusade for the purchase of growth stocks has never been directly concerned with their income possibilities, the record of these securities tends to indicate that growth stocks can provide, after one to five years, more income through more liberal dividend payments than income equities. The net loss in income, because of this current exchange of cash for capital appreciation, is more than made up after a few years.

Where the necessities of providing income are satisfied, the use of available funds in growth equity situations would be far more advantageous than committments in income equities.

The recent trend in the equity market has been to price the growth stocks up, reflecting optimistic projections of many economists and businessmen for the 1960's. It would therefore seem reasonable to expect a continuation of this trend where income is desired through investment in "growth" stocks. The writer realizes that at a point, as the past has demonstrated, this advantage can be overdone. Nevertheless, the record does show that growth stocks have worked out well when purchased for income purposes.

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UNITED STATES LINES COMPANY



Common Stock DIVIDEND

The Board of Directors has authorized the payment of a dividend of fifty cents (\$.50) per share payable March 6, 1959, to holders of Common Stock of record February 13, 1959.

WALTER E. FOX, Secretary One Broadway, New York 4, N. Y.

National Distillers and



Chemical Corporation



DIVIDEND NOTICE

The Board of Directors has declared a quarterly dividend of 25¢ per share on the outstanding Common Stock, payable on March 2, 1959, to stockholders of record on February 10, 1959. The transfer books will not close.

PAUL C. JAMESON

January 22, 1959.

Treasure.

DREWRYS

A quarterly dividend of forty (40) cents per share for the first quarter of 1959 has been declared on the common stock, payable March 10, 1959 to stockholders of record at the close of business on February 26, 1959.

Drewrys Limited U. S. A. Inc.
South Bend, Indiana
T. B. JEANNERET,
Secretary and Treasurer

234th CONSECUTIVE

2J4 QUARTERLY DIVIDEND 50 cents per share... Payable March 31, 1959... Record date

E. J. DWYER Vice-President & Secretary February 4, 1959

ESB

March 9, 1959.

THE ELECTRIC STORAGE BATTERY COMPANY

ROME CABLE

80 h Consecutive Dividend

The Board of Directors of Rome Cable Corporation has declared consecutive Dividend No. 80 for 25 cents per share on the Common Stock of the Corporation, pay-ble March 18, 1959, to holders of record at the close of business on February 27, 1959.

GERARD A. WEISS, Secretary Rome, N. Y., February 17, 1959

P. Louillard Company AMERICA'S FIRST TOBACCO MERCHANTS • ESTABLISHED 1760









DIVIDEND NOTICE

Regular quarterly dividend of \$1.75 per share on the Preferred Stock and regular quarterly dividend of \$1.00 per share on the outstanding Common Stock of P. Lorillard Company have been declared payable April 1, 1959, to stockholders of record at the close of business March 4, 1959. Checks will be mailed.

New York, February 18, 1959

G. O. DAVIES, Treasurer

OLD GOLD STRAIGHTS

Regular Crush-Proof

Crush-Proof Box
OLD GOLD FILTERS

Smoking Tobaccos

BRIGGS UNION LEADER FRIENDS INDIA HOUSE

Cigarettes

King Size

Crush-Proof Box

KENT NEWPORT
Regular King Size

King Size Crush-Proof Box EMBASSY MURAD HELMAR

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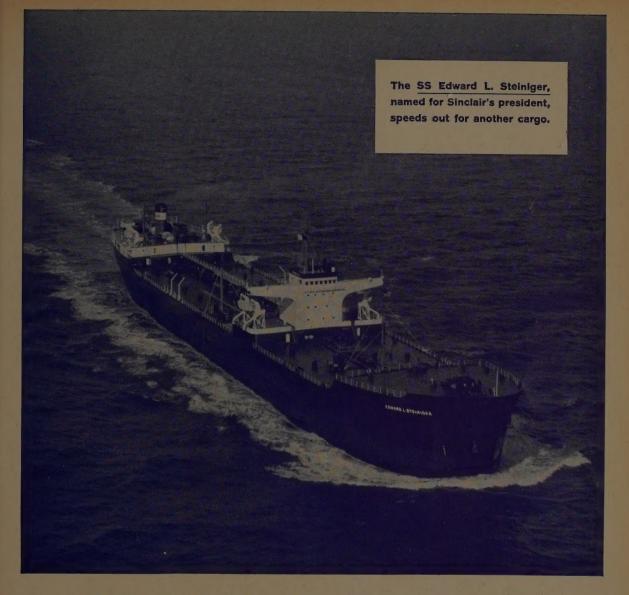
BETWEEN THE ACTS

Little Cigars Chewir

Chewing Tobaccos

BEECH-NUT BAGPIPE

HAVANA BLOSSOM



A Capital Ship for a Profitable Trip

"The finest work horse in the Sinclair fleet" is the way W. N. Damonte, manager of marine operations, describes this new 44,000-ton tanker. A high-speed ship, with no frills, she was built with one thought in mind — rock bottom per-barrel carrying costs.

The Edward L. Steiniger brings to almost half a million tons the cargo carrying capacity of tankers serving the integrated Sinclair organization. These ships provide the economical transportation so essential to a business dealing in a bulk commod-

ity such as petroleum. Tailored to the special requirements of the Corporation's domestic and foreign operations, these tankers contribute markedly to Sinclair's profitable growth.

SINCLAIR

A Great Name in Oil



Scientist at Pittsburgh Plate Glass Company's Springdale Paint Research Laboratory tests the scratch-resistance of PPG's new appliance finish, Duracron. When equal pressure is applied to Duracron and to a conventional appliance finish, the conventional

finish is severely scratched, while Duracron remains undamaged. Duracron is one of the many new and improved products for home and industry which have come out of PPG's continuing program of research and development.

PPG research develops new double-tough finish for the expanding appliance industry

We call it Duracron. It resists stains, corrosion, scratches, detergents and is one of the most permanent finishes ever developed. In impact tests it's twice as tough as ordinary baked-enamel finishes. And it costs less to use—one coat does the job of two.

Many large manufacturers have already committed substantial segments of their 1959 lines to this remarkable finish. Other firms are now investigating its lower-cost, longer-life characteristics.

Duracron's potential excites the imagination

not only in the expanding appliance field but also in the air-conditioning, building material, container and other industries.

Duracron was developed by PPG research—a continuing program that seeks the new and the better in coatings, glass, chemicals and fiber glass. Right now, PPG products are used on autos, buses, planes, trains and ships . . . in homes, schools, factories and stores . . . in food, steel, rubber and textiles. There's hardly an industry or market that doesn't use PPG products.

PPG benefits your living in countless ways



PAINTS . GLASS . CHEMICALS . BRUSHES . PLASTICS . FIBER GLASS